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ABSTRACT

This updated guide to using portfolios in educational assessment incorporates current teaching practices and new technology. The portfolio is defined as a systematic and organized collection of evidence used by the teacher and the student to monitor the growth of the student's knowledge, skills, and attitudes. The guide offers: (1) clear objectives; (2) a rationale for each alternative to traditional assessment practices; (3) portfolio guidelines by grade and subject; and (4) current technology for enhancing portfolio implementation. Five resource chapters contain discussions of issues in portfolio development, the portfolio conference procedure and report, and an electronic portfolio template and an annotated bibliography. (Contains 36 references.) (SLD)

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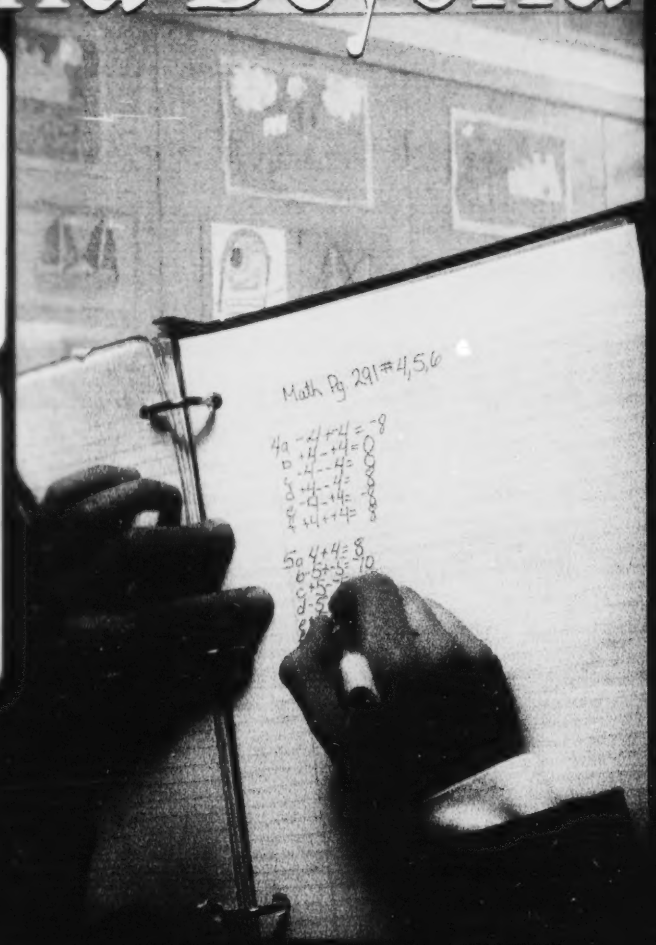
Portfolios Across the Curriculum and Beyond



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Second Edition

Portfolios Across the Curriculum and Beyond

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Second Edition

Portfolios Across the Curriculum and Beyond

Donna J. Cole • Charles W. Ryan
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Preface

The issue of portfolio implementation within current teaching practices must be considered as we seek to reform the American education system. In this guidebook, we explain the purpose and rationale for initiating a portfolio process in the schools. A number of succinct reasons directed our efforts in assembling each chapter. They are the need to

1. Present professional educators with a clear rationale for portfolios in the school
2. Present realistic examples for portfolio implementation
3. Suggest alternatives to traditional assessment (i.e., paper-and-pencil tests)
4. Present portfolio examples by grade and subject
5. Provide ideas for enriching classroom practice
6. Stimulate professional educators to higher levels of performance

We are indebted to our public school colleagues for sharing with us their ideas and expertise relating to portfolios, and we recognize the need for continued dialogue on portfolio use and development

in public education environments. It is our expectation that the ideas presented will stimulate further portfolio experimentation in the schools. In addition, there is a need to continue developing the portfolio process with preservice teacher candidates as we seek to develop strong partnerships with the schools.

We would like to thank Jerry Herman for his initial encouragement and support for this project, and Gracia Alkema, president, Marlene Head, production editor, Alice Foster, acquisitions editor, Julia Parnell, editorial assistant, and all of Corwin Press for their expert care and handling of this new edition.

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About the Authors

Donna J. Cole has worked in K-12 systems in inner-city Cleveland and Chagrin Falls, Ohio, and in West Virginia and Utah. Her Ph.D. is in cultural foundations of education from the University of Utah, where she taught introduction to education and social studies methods. She has been at Wright State University since 1987, where she has coordinated the foundation phase of the teacher education program, served as interim Teacher Education Chair, and currently directs the Post-Baccalaureate Professional Education Program (PEP), a graduate teacher-training program.

Cole's specializations are in cultural foundation (with a pluralistic thrust) and assessment (with a concentration on authentic assessment, especially portfolios). She cochaired the Ohio Consortium for Portfolio Development, which collaborated with Stanford University's Teacher Assessment Project, directed by Lee Shulman. During the 1993-1994 academic year, she was an associate with the National Network of Education led by John Goodlad. As a result of this experience, Cole was instrumental in developing partnerships with local school districts. As part of these partnerships, the PEP places interns in classrooms for the academic year and has initiated a number of collaborative training activities with the school staff.

Cole has continued to contribute to the professional literature via articles, chapters in books, and student curricular guides. In her current assignment as a professor of teacher education, she continues to teach and work for the reform of teacher education.

Charles W. Ryan has served for the past 20-plus years in a variety of university posts and assignments that have required teaching and administrative responsibilities. From the role of department chairperson, he progressed to assistant dean and dean of a major teacher education unit. His current assignment has required involvement at both the national and local levels in the politics of education and the development of strong undergraduate and graduate programs. In addition, Ryan has continued to conduct research as it relates to faculty productivity, organizational analysis, and career development theory.

Ryan's professional interests are wide ranging, and his book, *Career Counseling: A Developmental Approach*, coauthored with Robert Drummond, has been adopted by a number of counselor training programs. His career activities have interfaced with American public schools, colleges, universities, and state departments during a period that has witnessed significant changes in American education. He continues to teach and pursue scholarly endeavors while serving as a professor of educational leadership and human services, and as director of graduate studies at Wright State University.

Fran Kick, educational consultant and professional speaker, is the founder and coordinator of Instruction & Design Concepts, which develops and coordinates a series of dynamic and exciting educational and self-motivational personal leadership sessions and workshops titled KICK IT IN®. Since taking a leave of absence from teaching in 1991, he has developed his part-time speaking adventure into a full-time mission. Today, Kick presents more than 100 instructional and motivational clinics every year across the country to thousands of college/university, high school, and junior high/middle school students, plus the many professionals who work with them. In addition, he works with association/convention and corporate organizations who are actively engaged in the learning process. Kick speaks at many state, regional, and national conferences.

From fifth-grade students to Fortune 500 professionals, Fran Kick always KICKs IT IN!

From 1992-1997, Kick presented more than a dozen Regional Leadership Workshop programs every year with Attitude Concepts for Today, Inc., a nationally recognized seminar company specializing in youth. In addition to his busy travel schedule, he taught as a consulting adjunct faculty member at Wilmington College (Ohio) and served as the consulting director for the Wilmington Leadership Institute from 1995-1998. During this time, Wilmington College was recognized by the National Clearinghouse for Leadership Programs and the Higher Education Research Institute as one of the top 16 programs in the United States. The program also was selected for inclusion in the 7th Edition of the Center for Creative Leadership's *Education Sourcebook.*

Having spent 3 years as a psychology assistant in a clinical practice as well as a consulting associate for a child and youth development center, Kick has experience counseling students weekly on a one-to-one basis. He also has appeared a number of times on television, including WDNT-TV News, an ABC affiliate, and WRGT-TV, an affiliate of the FOX Television Network, where he was the host and coproducer for the TV show TEENTALK.

Kick's writing has appeared in numerous state and national educational publications. The U.S. Department of Education's Office of Educational Research and Improvement's ERIC/CAPS Clearinghouse published his work titled, *The Self-Perceptions of Self-Concept and Self-Esteem* and selected it for inclusion in the *Resources in Education Index*. Kick has a B.A. in education and an M.A. in educational psychology.

Bonnie K. Mathies is currently serving as the assistant dean for Communication and Technology in the College of Education and Human Services at Wright State University (Ohio) and is an associate professor of education, Department of Educational Leadership. She has worked in K-12 inner-city and suburban schools in Ohio. Her classroom experiences range from a traditional self-contained sixth grade through high school biology, to eighth-grade English, and seventh-grade social studies. She also was a curriculum coordinator and media specialist in a vocational rehabilitation facility.

She has been at Wright State University since 1974 and has served as department chair for Educational Technology, Vocational Education and Allied Programs, and as program adviser for educational technology and library/media degree and licensure programs.

Mathies's focus is on the production of instructional materials; computer education; library/media preparation; the development, administration, and management of educational technology programs; and instructional design and development. She has used portfolios for more than 10 years with educational technology and library/media graduate students who are currently expected to develop an electronic portfolio as a culminating comprehensive-assessment experience.

Mathies has been an active participant in professional organizations and recently completed a term of office as the president of the state library/media association representing more than 1,200 K-12 library/media and technology educators. She is a frequent presenter at national and state conferences, contributes to professional literature via journal articles and book chapters, and has been instrumental in the development of community computer centers in the Dayton area.

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The Road to Authentic Assessment and Portfolios

Objectives

After reading this chapter, you should be able to

1. Discuss evaluation's evolution into formal and authentic assessment
2. Discuss the basic rationale for authentic assessment procedures
3. Discuss the need for portfolio use in public schools
4. Describe the basic differences between process and product portfolios

Introduction

Schools are state and local institutions mandated to educate future citizens. To educate can be translated into learning the basic knowledge, dispositions, and skills needed to exist successfully in the United States's structural democracy. Thus learning must be

assessed, but documenting and evaluating actual classroom learning has frustrated professional educators as well as the public during the last half of the 20th century. The national outcry for school accountability resulted in using standardized testing to document school learning. Tests, however, fail to permit students to demonstrate the multidimensional aspects of what they have learned. Teachers refuse to accept a one-shot formalized instrument as the determinant of their teaching efforts and their students' learning. A formalized test appears rigid and static, a frozen task in time, as well as simplistic; it focuses on the final score, not on how the student arrived at the answer; and it promotes conformity, even though educators know students learn differently and at varying degrees. Society's acceptance of exam results as the measure of school learning fosters test-driven classroom instruction, rather than the curriculum determining instruction within the school; the goal becomes excelling on the test. Individual student learning rests on how well he or she does on a test, rather than how much the student really knows and how the student might demonstrate the school content (inclusive of required knowledge, skills, and dispositions) in the most authentic manner.

Assessment History Overview

The influence of testing on educational systems and policy appears more powerful now than at any time in history. However, nationwide school renewal efforts suffer from the counterdemand for test score improvement, and educational progress is undermined by the pervasive use of tests that contrast with current theory and practice.

Evaluation is not a new concept in education. It was evident when Socrates used mediated evaluations as he guided students' learning. Educational evaluation relying on testing procedures can be traced to the Chinese (200 BC), who conducted civil service examinations.

Our nation's evaluation history is strongly rooted in the testing idea. Robert Thorndike (early 1900s), called the father of the educational testing movement, helped convince the country of the value of using testing to measure human aptitude. The stan-

dardized test paradigm gained momentum in the 1920s and 1930s. The 8-year study by Tyler (1942) and the evolution of accreditation (the process of evaluating educational institutions) established formalized evaluation as the most substantial way to account for learning. Testing became identified as an important means of evaluation, which produced a mathematical score (believed to be factual, thus representing learning acquisition). The establishment of the Educational Testing Service (ETS) in 1947 solidified the supremacy of tests as the ultimate assessment tool.

The 1980s theme of "accountability" fueled test use in documenting learning. School systems invested huge amounts of time, energy, and money in testing. Minimum competency tests, state-mandated tests, criterion-referenced tests, and norm-referenced tests were but a few that became an active part of the school schedule. These exercises involved limited tasks, for example, reading a phrase and answering a multiple choice item. A major testing criticism is that most exams require lower-level thinking skills, usually ignoring most higher-level—and perhaps controversial but certainly more useful—skills, such as synthesis. Almost every state expects educators to teach for overall content: knowledge, performances, and dispositions. Yet tests can give little or no information other than knowledge acquisition and basic skills. Although such traditional modes of assessment continue in the majority of classrooms, educators recognize the liabilities inherent with these tools.

The currently available state and national tests produce a limited picture of student achievement, fail to correlate with school performance, and encourage unsound instructional practice. Teachers believe that the multiple choice format common to traditional assessment falls short in measuring students' ability to organize relevant information or present a coherent argument. Teachers, when forced to teach to tests, find instruction cheapened, undermining the authenticity of test scores. Instructional time centers on practice and drills, driving out quality teachers (Shepard, 1989). Traditional assessment practices lack sensitivity to the individual growth that educators desire in students; thus the instruction itself appears misguided (Valencia, Pearson, Peters, & Wixson, 1989). Educators know that reports based solely on traditional standardized test scores represent a limited, microscopic, and incomplete view of students' abilities (Hiebert & Calfee, 1989) and fail to clarify the

total progress of students (Flood & Lapp, 1989). As Wolf (1989a) explained, traditional assessment structure serves to discourage lifelong skill acquisition, and much of the testing prevents students from thoughtfully responding to and judging their own work.

A solid assessment program consistently assists, as well as requires, students to take responsibility for record keeping and metacognition and reflection while learning. Educational psychologists generally view learning as interactive with a number of variables, and they oppose mere testing for accountability.

A key to successful teaching is evaluation that leads to instructional improvement. Traditional, norm-referenced, competitive measures that rank students against one another (as letter grades or numerically scored tests) yield limited formative assessment information and seldom aid profitable instruction. For today's learners to be self-determining, they must self-monitor and self-evaluate. Constructive programs employ self-referenced growth measures designed to permit students to take ownership of their learning movement. Skilled evaluators base assessment on a developmental perspective. These evaluators marry growth development models with specific curriculum fields, such as reading stages, mathematical thinking, spelling, and so on. Rather than labeling students with arbitrary age or grade-level means, educators track each student's individual growth through developmental phases. Accurate assessment requires that teachers construct avenues of valuing, tracking, and recording individual factors, such as growth, improvement, effort, reflection, risk taking, change, and so on.

As we enter the 21st century, educators are determined to validate usage of multidimensional assessment tools. Although informal strategies (e.g., interest inventories, checklists) gained popularity in the 1960s and early 1970s, educators and the public questioned if these methods matched the dynamic processes involved in learning. The current authentic assessment movement, in which documentation represents all aspects of learning, demands clear and accountable instruments.

Authentic assessment rests on systemic change. Thus, educators are turning to the idea of authentic evaluation to demonstrate their students' learning progress. Please take a few seconds to reflect on the following 10 educational thoughts.

Ten Educational Thoughts

1. Just because we taught . . . does not ensure that students learned.
2. Evaluation involves a set of tools used to analyze performance, including observation, demonstration, and work samples as well as tests.
3. Evaluation is subjective and judgmental.
4. Evaluation is a moral issue.
5. Evaluation should be both formative and summative.
6. Evaluation, to provide a clear picture, should include self-, norm-, and criterion-assessment criteria.
7. Evaluation, to provide a clear picture, should include aptitude and achievement test results.
8. Readiness and teacher instruction are significant factors to consider when evaluating.
9. The teaching goals should be considered when assessing learning. These goals must be linked to state and national standards.
10. Students need to be able to show what they have learned as well as what you want them to learn.

What Is Authentic Assessment?

A fundamental authentic assessment principle holds that students should demonstrate, rather than be required to tell or be questioned about, what they know and can do. Hence authentic assessment usually is classified as performance based. When employing performance-based assessment, students demonstrate their learning in a natural context. This type of evaluation can be open ended, structured or unstructured, and announced or unannounced. Sound evaluation programs provide, when needed, defensible student grades as well as test scores. Competitive, norm-referenced grading should occur with moderation as well as

wisdom and is educationally most sound when used for helping the educator and learner develop a clearer idea of the areas in which the student needs to work.

Authentic assessment (AA), identified as a powerful evaluation idea, focuses on the desired curriculum outcomes. Therefore, evidence of actual, complex performances of reading, writing, researching, problem solving, creating, and speaking is included. Authentic assessment requires higher order educational outcomes in which students integrate their learning in realistic applications. Authentic assessment practices encourage good instruction. Student evaluation uses time profitably and utilizes educationally sound classroom instruction strategies. Authentic assessment unequivocally supports state-of-the-art instruction and curricula. When assessment interrelates with instruction, teaching is more effective. Therefore, AA must be integrated into instructional practices.

Several characteristics represent authentic assessment. Educators believe that assessment should measure student performance in relation to established educational goals. The student should agree with these goals. Authentic assessment includes observation of each student's current work. Because learning represents much more than merely retaining given knowledge and demonstrating a set of discrete skills, authentic assessment reinforces multidimensional indicators built on the essential content identified by the system. Students apply skills, integrate knowledge, and demonstrate by acting on values and attitudes. Multidimensional instruments require the inclusion of various student performance indicators. A teacher has available a rich repertoire of assessment strategies from which to select in orchestrating sensitive, student-appropriate evaluation activities for varying curricular disciplines. A few strategies include checklists, lab sheets, inventories, videos, tapes, interviews, and performance assessments. AA requires processing by student and teacher. Examples of this process include observation, conferencing, the use of the writing process, self-evaluation, and collaborative evaluation as well as traditional paper-and-pencil tests.

For maximum effectiveness, the total educational community must hold authentic assessment in esteem. Proper AA includes many different individuals working collaboratively to accurately

evaluate student growth and learning. Incorporating multiple measures encourages examination of students' learning from varying perspectives; thus a more accountable picture of growth occurs. Each classroom might permit external assessment (district, state, or national tests), teacher-directed evaluations, student self-evaluations, and parental input, as well as input from other significant and informed parties. The exercises involved should be useful, worthy, and meaningful to students and the learning community. Students are held accountable for demonstrating learning. Likewise, educators provide students with informative feedback. Authentic assessment must be free of cultural, gender, and racial bias. Authentic assessment correlates with what students are learning and helps them gain confidence in their ability to master the subject.

Authentic Assessment Components

Authentic assessment

- Assists in learning
- Encourages good instruction
- Relates to curriculum outcomes
- Fosters higher order learning
- Follows developmental perspective
- Uses testing sparingly
- Supports time efficiency
- Reports meaningful information
- Promotes partnering of parents, educators, and students
- Fosters student metacognition and reflection
- Is individualized

Time, a precious and limited teacher resource, must be analyzed prior to undertaking AA. Educators should reallocate the considerable amount of time already sacrificed to assessment, evaluation, testing, grading, and record keeping. This reduced scoring time can then be redirected to saving and documenting student work.

Consider the following four ideas when planning to use AA.

Four Important Authentic Assessment Ideas

1. The purpose of the activity should be clear. Instructors should know how they will use the results.
2. Instructors should design activities relative to instructional goals, asking students to apply what they have learned.
3. The activity should have more than one possible answer and perhaps more than one possible outcome.
4. Student-designed activities could serve as a possible assessment.

Authentic assessment of this nature develops within the school schedule. Assessment is administrated at various points during the students' progress, and a more comprehensive view of students' learning surfaces. Educators clarify what tasks students should undertake and how to perform them.

Scoring authentic materials concerns evaluation experts. Authentic assessment requires careful analysis, and instructors must keep written records. Educators decide if holistic or analytic scoring is appropriate for the evaluation purpose; establishing the scoring criteria before administration is essential. Both students and teachers must understand the task, purpose, and usability. All recording devices, such as checklists, rating scales, and scoring rubrics, must be available before the students undertake the activity. Although testing will be a part (usually limited), most of the assessment involves a process of unobtrusive information gathering about students' learning. The assessment evidence being collected occurs during the course of the daily schedule and is ongoing (more than once or twice per grading period). The classroom environment should remain more student-learning centered. Students are questioned and observed, and their learning is explored. Because the educators spend less time on standardized tests, efficiency is inherent in the design, and testing side effects also decline. The following chart identifies a repertoire of authentic assessment strategies.

Authentic Assessment Repertoire

1. *Kidwatching/anecdotal records:* open-ended, narrative observational notes, logs, and records
2. *Checklists:* structured, curriculum-anchored, observational guides, charts, and records
3. *Interviews/conferences:* face-to-face conversations to access, trade, and monitor student growth
4. *Performance assessments:* criteria and instruments used for analytic scoring of complex performances
5. *Classroom tests:* improving the construction and scoring of teacher-made achievement measures

Samples of the above are incorporated in a portfolio, which may also contain work samples, results, projects, video- and audiotapes, learning logs, student journals, and other pertinent student artifacts.

The employment of portfolios has garnered significant attention as an alternative to traditional student assessment. Several reasons support employing portfolios as authentic assessment tools.

What Is a Portfolio?

Vavrus (1990) defines portfolios as "a systematic and organized collection of evidence used by the teacher and student to monitor growth of the student's knowledge, skills and attitudes" (p. 48). Portfolios provide authentic and meaningful documentation of students' abilities. Curriculum, instruction, and assessment intersect via portfolios, tying the three together effectively for students. Portfolios must contain the artifacts of students' progress, as well as their reflections on both their learning and the chosen artifacts. Students must feel ownership of the portfolio, so they need to have decision-making power about the selected entries. Reflections assist them in taking responsibility for curriculum consumption. Because students design the portfolio with the purpose of proving their learning, it concretely represents their efforts and accomplish-

ments. Students affirm themselves as learners as well as valuing their own work. For students to assume responsibility, the portfolio must illustrate explicitly or implicitly the students' learning activities. The imperative portfolio ingredients are listed below.

Imperative Portfolio Ingredients

- *Rationale:* purpose for forming the portfolio
- *Intent:* its goals and learning standards
- *Content*: actual evidence of learning
- *Criteria:* what is positive performance and what is unacceptable performance
- *Judgments:* what the content tells us about the student's learning

Portfolios contain actual classroom artifacts. Because the portfolio contains many entries, both formal and nontraditional evaluation can be incorporated. Thus a full range of cognitive, psychomotor, and affective skills can be evaluated. The ultimate result will be reliable because of the availability of more than one illustration of academic performance. A clear advantage to portfolio assessment rests with the teacher's ability to assess the student's process of learning. Therefore, current learning theories can be identified and used. Built on this advantage is the involvement of the students in their own assessment. Students help in the selection of work samples and, even more important, reflect on what the selected entry represents. Students examine and analyze their work. This provides them the opportunity to reflect on the depth of their learning.

Two Types of Portfolios

The portfolio might serve different purposes at different times of the school year. Two types of portfolios have evolved. The primary and more active type of portfolio is the *process portfolio.* During the year, students use the portfolio as a growth instrument. It needs to

demonstrate students' performance at the beginning of a learning task. At this point, students should answer questions such as Why did you perform at that level? Where do you hope to move? How do you plan to get there? and When? As the students progress, teachers collect interim evidence to document the movement toward mastery. When the students successfully complete the task, the final evidence is placed in the portfolio. Once students master a task, they need to summarize what lead to learning mastery and what they need to do in the future.

Even unfinished work might be placed in the portfolio to identify a problem area. The students then reflect on why it is a problem and what might be done about it. Wolf (1989a) explains that chronologically sequencing students' work and recording the macrogenesis (long-term evolution) provides a formidable view of the students' learning process. Most portfolios incorporate several projects, independent work, journals, and even formal testing results as pieces of the students' whole progression.

Because of the bulk and the time needed to manage a process portfolio, eventually a metamorphosis should occur. From the rich and dynamic process portfolio, a leaner and more abbreviated portfolio can be produced, called the *product portfolio.* The most realistic time for the reduction would be at the end of the academic year or at the completion of a program. The product portfolio illustrates students' proficiency of the learning tasks. All selections should be materials that the student is willing to share and that reflect the student's success at mastering the curriculum. The school system should retain a copy of the product portfolio for future reference. To assist with higher levels of learning, the teacher should include summary reflective statements on how the student learns.

Portfolio Contents

A portfolio will have multiple, but not conflicting, purposes. It should also include the student's personal goals, interests, and learning styles. Selections may also reflect the interests of teachers, parents, and/or the district. One almost universal portfolio purpose centers on showing the student's progress in the institution's

instructional program (e.g., writing proficiency, mathematical competencies, etc.).

Because the portfolio should contain growth information, varying types of entries are included. For knowledge and skill mastery, the most obvious evidence is a series of student work samples (paper, tape recorder, or video) that shows improvement. For attitudes, changes observed on interest inventories, records, or outside activities illustrate growth.

Portfolios have not yet become commonplace, so instructors need to provide samples of portfolios, reflective statements, and reflective questions to answer about entries. Teachers should identify the skills and techniques involved in producing effective portfolios. This requires a familiarity and comfort zone on the part of the instructor employing portfolio usage. As in all academic pursuits, an instructor determines the project success. Enforcing the use of portfolios by disgruntled faculty will guarantee problems. Providing inservice for faculty members who desire authentic assessment strategies fosters success.

What Portfolios Must Include

- Student-selected work pieces
- Student reflections on entries
- A clearly identified purpose
- Formative and summative samples
- Growth samples

Planning for Portfolios

Before determining the utility of any instrument, teachers need to pay careful attention to its potential benefit. A few reasons for incorporating portfolios are listed below:

1. *Reflection of curriculum learned.* Portfolios are direct reflections of actual classroom teaching. Portfolios relate directly to local standards, textbooks, and emphases.

2. *Discussion instrument.* Portfolios serve as a concrete vehicle for student-teacher, parent-teacher, and parent-student discussions.
3. *Comparison work.* Portfolios act as a cross-section lens, providing for future analysis.
4. *Variation of work.* A diversity of work sample results from portfolio construction. By providing various steps taken to complete the final work, the educator has evidence to identify the student's stumbling blocks.
5. *Assets and liabilities.* By viewing the total working patterns of the student, teachers can identify areas of strengths and weaknesses. Once identified, teachers can formulate strategies to use the student's strengths to assist in the problem areas.

If these suggestions are incorporated, the process of portfolio installation will be easier.

How to Use Portfolios

For portfolio use in the classroom to produce positive results, careful preplanning must occur, including following several steps. First, the instructor must identify the ultimate goal of the project. The teacher must clearly articulate and discuss the goals with all school faculty. If goals are vague, portfolios become unfocused. It is important to identify the school's, district's, and state's goals that support classroom efforts.

Second, the educator must clarify the instructional strategies necessary to meet the articulated goals. Remember that portfolio usage reflects the curriculum and instruction that students receive. Teachers might complain that standardized tests do not test what is important or the curriculum used with students. Portfolios do. Opportunities need to be built into the curriculum via strategies to create artifacts for the portfolio. The artifact should emphasize the process employed to actualize the result, rather than right answers. By analyzing process, students acquire supportive evidence on their personal intellectual progress.

Third, once the instruction has occurred, instructors must determine growth. Assessment assumes a clear understanding of expectations and criteria. The evaluation helps the instructor systematically analyze what students have successfully accomplished and how they succeeded.

Selecting Portfolio Content

To be effective, portfolios should contain a variety of materials so that the student, teacher, parents, and administrators can obtain an accurate picture of the student's development (Valencia, 1990). Students and teachers should be selective about what appears in the portfolio to ensure that the contents focus on the goals of the curriculum. A portfolio should include a table of contents, identification of who selected the piece, the date of the work, the description of the task, and student reflection on the entry. Students should have access to their own portfolios.

Once the content for mastery is identified, the student should make the initial selection. Teachers should provide guidance to the student about selecting the best work and clarifying why he or she has identified it as such. Teachers, as well as peer consultation, will assist students in making choices. Permitting the students to build their own portfolios will foster their ownership.

The portfolio should include a variety of subjects and tasks. Realizing that portfolios serve as a biography of work and that they capture different snapshots of students' learning helps in the selection process. On a diverse project (such as a term paper), a collection of work throughout the project aids in identifying the various intellectual tasks. Entries associated with attitudes and values are a must. This requires that the teacher include assignments assessing attitudinal data about learning, self-esteem, and career plans.

When assisting students in making their selections, teachers should give attention to choosing entries that demonstrate pre- and postgrowth. If cross-group assessment is desired, then all students should include certain assignments. A longitudinal benefit of portfolios is for students to examine their approach to

learning as well as their strengths and liabilities; teachers should guide students in including entries that permit the benefits to happen.

Selection needs to start early in the year (entries from the previous year may be available). Continue to request selections of entries through units and at the end of a project. End-of-grading-period samples and end-of-the-year entries are imperative. Predetermined selection dates make the process progress smoothly.

Possible Portfolio Artifacts

1. Work samples
2. Letters
3. Sketches
4. Drawings and paintings
5. Snapshots
6. Projects
7. Videos
8. Tapes
9. Checklists
10. Logs
11. Tests/scores
12. Computer work
13. Unit work
14. Collaborative projects and assessment from peers

Reflection

The most desired outcome of portfolio construction centers on having students assume learning responsibility and having them develop a desire to do their best work; thus, reflective statements must appear within the portfolio. Students need to develop meta-

cognition, the ability to think about their thinking. Students should examine the learning process as well as the product. The goal of metacognition is student self-actualization. Although beginning reflections might appear narrow or even shallow, continued reflection will lead to deeper insights. Portfolios start to take on a new value. They serve as the students' own educational history by documenting their learning progression. Reflection, a tool for analysis of learning and self-growth, should begin early in a student's education.

The instructor must both understand reflection and be a reflector in order to guide others. Students must understand that reflections are not summaries, but are serious writing activities addressing their learning. Summaries merely abbreviate what is evident in the entry. Reflections analyze and synthesize knowledge, skills, and attitudes as they develop. Reflections answer the following types of questions.

Reflective Entry Questions

1. Why is this your best work?
2. How did you go about accomplishing this task?
3. What would you do differently if you did a task like this again?
4. Where do you go from here?

Reflection: Why are students seldom requested to reflect on conventional assessment?

When preliminary work entries appear in portfolios, students reflect on each step of the learning process that leads to completion. Students gain knowledge and understanding of "the scope of what they learned" (Wolf, 1989a, p. 39). Although original reflections might focus on less significant dimensions, such as neatness

of showmanship, with practice, students develop the ability to modify and expand their criteria and factors. Students and teachers need guidance in writing reflective statements. According to Killion and Todnem (1991), we can categorize reflections in three ways.

Three Reflective Directions

1. First, *reflection-on-action* requires looking back on what one has accomplished and reviewing the actions, thoughts, and product.
2. The second form of reflection is *reflection-in-action.* In this activity, the individual is responsible for reflecting while in the act of carrying out the task. If, for example, the student is writing a story and has left out the setting, reflection-in-action could guide the correction of a major component of the story writing.
3. The final reflective form centers on *reflection-for-action.* This reflection form expects the participant to review what has been accomplished and identify constructive guidelines to follow to succeed in the given task in the future.

Reflective Teachers and Administrators

Major assumption: In authentic assessment, educators are reflective practitioners.

Teachers in an authentic assessment environment do reflect. According to Lasley (1992), "A teacher's level of experience will influence his or her ability to reflect critically. Neophyte teachers will not exhibit the same capacity for critical reflection as would be possible for a more veteran teacher." Dewey (1904) attended to

reflective ability when he discussed the "habit of reflection." Teachers should know how to teach and know how to reflect on the techniques used in classrooms. Reflective teachers, Dewey adds, are freed from engaging in impulsive or routine action.

A reflective teacher leads in our reformation of schools. Posner (1985) argues, "Reflective teaching will allow [the teacher] to act in deliberate and intentional ways, to devise new ways of teaching rather than being a slave to tradition, and to interpret new experiences from a fresh perspective" (p. 20).

Van Manen (1977) described a conceptual focus on critical reflection. He identified three levels of critical reflection.

Van Manen's Reflection Levels

1. The first level centers on *technical criteria.* At this level, reflection is concerned with thinking about what techniques were used to achieve the stated objectives.
2. The second level involves *conceptual reflection.* The conceptual level focuses on the relationships between the instructor's practices and the theoretical principles guiding the practices.
3. The final level, *ethical reflection,* enables. The goal of a teacher-preparatory program designed to make reflective teachers would be to move preservice educators from a how-to perspective to discussing reflective decision making. Hence, to be a reflective instructor, one should assess the consequences of actions and determine ethical, political, and moral implications for schooling and learning.

Other theorists, such as Kitchener and King (1981) and Ross (1989), have even constructed developmental typologies to describe reflection. Their developmental approach suggests that teachers progress through stages of development. To constructively assist students with reflection, an instructor must become proficient at asking leading reflective questions. Wellington (1991) highlights several reflective questions.

Wellington's Questions

- What did I do?
- What does it mean?
- How did I come to be this way?
- How might I do things differently?
- What have I learned?

Reflective teachers look at techniques and face frustrations to improve instruction and help students learn. As the instructor reflects more, assignments given to students lead to more reflection. Thus a reflective teacher nurtures reflective, exploring students.

Reflections allow students to track their progress by reviewing their work throughout the year. Students who review their work over time also see how their thinking and working processes have improved.

A typically voiced concern questions whether student reflections can and should be assessed. The answer is yes. Teachers must write back to students guiding their reflectivity. For example, "Chad, you did a fine job of summarizing the selection. Explore what you are now confident in doing. What will you do to enrich the activity in the future?" It does take time, but certainly it is time well spent, both morally and educationally.

School administrators must likewise develop their reflective skills in relation to school goals, as well as learning outcomes, administrative practices, and public needs for accountability. *The Principal's Portfolio*, by Brown and Irby (1997), details how a portfolio can assist administrators in reflective practice.

To guarantee proactive portfolio movement, a preliminary assessment can determine the adequacy of the physical construction. A checklist or criteria-building list helps the student understand what must go into the design. On finalizing the preliminary portfolio construction, the remaining evaluations should be directed toward reflecting and mastery of the knowledge, performances, and dispositions.

Some portfolio advocates believe that formal tests should be eliminated from the portfolio. Rather than viewing formal and authentic as polars, our view identifies authentic assessment as a bridge for standardized testing and class assessments. Within the portfolio, a student should place standardized test results accompanied by reflective statements.

A Word on Assessing the Portfolio Itself

The following are two givens for evaluating the portfolio:

Given 1: Authentic assessment means eliminating the old way of thinking.

Given 2: The primary success of evaluation is allowing students to take ownership of their learning.

Regarding Given 1, authentic assessment breaks away from the restraints of traditional assessment. The old evaluation paradigm that permitted a letter grade or point system to represent a final statement on students' efforts or learning is rejected. Traditional measures can be a part of the process but never the only, and surely not the final, word.

Given 2 rests on the premise that for too long, teachers have accepted the responsibility for student learning. Teachers were responsible for knowing how each student learned and were expected to make learning occur with each student. It did not work, did it? Why? Because students were relieved of the responsibility of accounting for their own learning. The public paid for their free public education, and educators were held responsible for their learning. Thus, students were free to act as resisters, as if the whole program was their opponent. Their job was to challenge the actual act of learning. To deactivate this faulty endeavor, the multidimensions of evaluating portfolios follow.

First, in the planning stages, multiple scoring strategies must be derived. Instructors must detail what types of assessments will occur and when. What will be the place of formal assessments? Will

you require students to have formalized tests within the portfolio? Remember, it is all right to use traditional assessments, especially for having students analyze how they compared with others. Also, they can reflect on their test-taking skills and behaviors.

Second, to get the portfolio established, a checklist or point sheet can be devised to bring all students on-line. This might sound behaviorist, but instructors must use all types of learning theories to accomplish the educative task.

More educational specialists are accepting authentic assessment as an appropriate source for documenting the learning process. Authentic assessment intends to involve students in challenging evaluations that approximate, or at least better represent, the reviews likely to face them as professional citizens and consumers (Wiggins, 1989). The actual evidence for assessment evolves from the context and content in which a learned task results. This evidence can be designed to represent real situations, problems, and concerns and, more important, involve students in the actual assessment process. Because educators are required to teach for the advancement of knowledge, performances, and dispositions, it follows that assessments should also provide evidence that students have made progress in obtaining content knowledge, skills to activate the information, and attitudes to ensure the use of the given knowledge and skills.

Summary

The key to making portfolios work rests in adapting the portfolio to the varying age, motivational, and ability levels of students. Portfolios offer teachers and students numerous benefits. They document students' growth, change, and risk taking, and can be used with any grade or motivational level. Portfolios provide both a wide-angle and narrow-angle view of the student. As Margie Krest (1990), an English teacher who has been using portfolios for many years, explains,

> Thus over the past six years, the portfolio has become a vital part of my . . . classes. Because it is so adaptable, I enjoy using

> it and seeing the students motivated to strive for the grade they desire. . . . And most important, as I've used portfolios, I've realized the extent to which the portfolio system is consistent with the theory behind the emerging paradigm [that] reflects a strong, student-centered [class]. (p. 34)

Chapter 1 provided a rationale and purpose of portfolios as a form of nontraditional assessment. Also, a link to portfolios and the educational reform movement was highlighted. Chapter 2 will present portfolio assessment in a nontraditional format. In Chapter 3, a number of portfolio models illustrate varying subject matter possibilities for systematic infusion in schools. Chapter 4 anticipates the future as technological possibilities are linked to portfolio development and practice. A portfolio process to assist teachers and administrators with personal professional growth is outlined in Chapter 5.

2

Strategies for Portfolio Implementation In the Classroom

Objectives

After reading this chapter, you should be able to

1. Develop a process for informing parents and community agencies about portfolio plans in your school
2. Develop a plan for starting portfolios at the building or unit level
3. Develop strategies for assessing the impact of portfolios on student learning and teacher use

Introduction

A portfolio process in the school requires a concerted effort to inform a variety of interested groups, such as parents, community representatives, administrators, school board members, and all teachers. It is essential that each school generate guidelines for informing others of their portfolio plans and general results. Systemic

infusion of a portfolio process across all subject areas will generate a pool of information of interest to parents and teachers on each student's learning style, self-concept, and educational plans.

Infusion is defined as a process in which the traditional curriculum is integrated with other learning efforts (e.g., portfolios). Traditionally, students completed work sheets, term papers, book reports, oral reports, and paper-and-pencil tests. Portfolio assessment, when infused, promotes the concept that learning is student centered and the responsibility of each learner. Portfolio use requires the student and teacher to meld traditional curriculum efforts with reflective analyses of the learning process. In short, systemic infusion describes the process whereby all teachers implement the portfolio process in those subjects currently taught in the schools.

To implement a portfolio process, each school community needs ample opportunity to plan how they wish to redesign their student assessment effort and how these plans will take shape over a period of time. Also, a shared decision-making approach must be developed that establishes connections between students, families, communities, and their schools. A reciprocal exchange of ideas on the purpose of education and how students are to be assessed will then develop. This dialogue must be genuine and must occur on a frequent basis so that all those interested in accountability understand the process and purpose of learning. As suggested earlier, we must move beyond measuring student growth through scores on standardized tests and develop insights into the total process of learning and how people use a number of approaches to master academic and social interaction skills (Flood & Lapp, 1989).

Measuring student growth through standardized tests is an established venue, but we must empower teachers, school counselors, and administrators to develop additional strategies and processes for assessing student growth. In this way, accountability to the community is demonstrated and provides additional evidence that our schools are doing a fine job of educating future adult citizens. The implementation of a portfolio process provides a construct for shared accountability and a vision of the future that includes high-quality education for students in a particular community (Mills, 1989). Portfolios involve parents, community mem-

bers, and civic organizations along with appropriate state and university agencies in assuming some responsibility for assessing the total growth of students.

A portfolio process for authentic assessment seeks to share information on a regularly scheduled basis, as well as informal opportunities for reporting to all constituents information about student progress. As suggested, portfolio analysis and reporting extends beyond test scores to include substantive descriptions of what students are doing and experiencing in terms of program, curriculum, and teaching efforts. The portfolio also includes student access to broad-based school opportunities in curriculum, sports, and subject-specific clubs. The portfolio documents academic progress in addition to identifying elements of effective citizenship, such as the development of coping skills that permit one to live and achieve success in a democratic society. As was suggested, methods of communicating to parents and the public include exhibitions of student work, such as displays and demonstrations of what they have learned and accomplished. The portfolio provides this unique link between the classroom teacher and the students who participate in those planned learning activities. The portfolio process of communication must be collaborative and provide opportunities for the education community to inform citizens in the community of school-based learning activities.

Implementation of a portfolio process requires reallocation of funds from the school budget as well as increased external support from the community. One approach is to provide community grants to schools that successfully start a portfolio process that documents what students are learning. This process helps teachers develop, document, and share their practices with the community and also rewards excellence in teaching. Certainly, the local business community should be involved in the development of an award system that recognizes teachers' efforts to improve the quality of learning through a portfolio process. Implementation, then, depends on the development of a school-based portfolio as a well-established process in grades K-12 and complete commitment by the teachers and administrators of a particular school or building.

A reform of this magnitude will be accomplished by local and state-based mandates to improve the pedagogy that occurs in

American public schools. It requires teachers and administrators to reflect on and analyze their educational practices and to develop alternative assessment strategies. Naturally, the provision of useful knowledge and information to assist students in coping in a technological world is important, but the curriculum will change only when educators carefully consider what they are seeking to do and under what conditions. In implementing a portfolio process, teachers and interested school faculty will need time to engage in those essential activities that lead to substantive curriculum and assessment reform.

Reporting Portfolio Progress to School Personnel

In more traditional learning environments, student progress is reported at 6- to 8-week intervals, an interval that no longer suffices in a society of rapid change. In the future, students will enter and exit the school at different time periods after mastery of selected content. Traditional June graduations will be replaced by differential entry and exit points for students, and the portfolio will permit continuous documentation of learning over the calendar year.

Throughout the 12-month school year, parent-teacher-student conferences provide opportunities to review student progress. They also permit planning of educational needs for each student in academic, self-esteem, and career areas.

In planning for the reporting of student progress to parents and administrators, the following guidelines will be of help.

1. *Develop an overview of portfolio efforts with student work samples.* Parents and administrators will need an executive summary of the portfolio and an explanation of what it contains. A product portfolio conference report used by the teacher will be of help with this conferencing (see Resource B).
2. *Present the total portfolio process used in a given grade or subject area.* It is important for all interested audiences to recognize the range of subject matter presented in a portfolio in contrast to a single test score.

3. *Present the portfolio content as evidence of the student's growth in all subject areas.* It may be necessary to simplify the reporting process and concentrate on a selected subject or two.
4. *Present the portfolio evidence as part of student growth and development as a person.* It is easy to fall into the trap of reporting success stories, but it may be more valuable to illustrate the difficult process of mastering the English language, mathematics, or science. For example, include a rough draft of the student's work prior to the final product.

Planning for Reporting

Throughout this guidebook, we have emphasized the process portfolio and suggested content for inclusion. It is now imperative that a plan for conferencing with students and reporting to other interested groups be detailed. The purpose of portfolio use must be repeated consistently over time if the implementation of this innovation is to succeed. In reporting to all individuals, the value of portfolios must be summarized and graphically illustrated. We suggest the following basic steps for developing a reporting system:

1. Identify the subject(s) to be reviewed prior to the conference with student or parents.
2. Use a portfolio conference report form (see Resource B).
3. Discuss student learning styles in relation to selected portfolio entries.
4. Establish dates, times, and locations for student or parent conferences.
5. Summarize the conference results (see Resource C).
6. Review school policy statements for release of student data.
7. Consult with the school administrators about conferencing plans.

The above guidelines imply both a political and policy awareness that is essential for reporting student data to constituency groups.

Reporting to Administrators

The administrator's role in developing a portfolio program involves both public and school-based support. Support can range from policy interpretation and administrative approval to budgetary allocations for materials or training. In the development of continued support, the faculty must provide data of portfolio use in assessing student growth. The portfolio contains evidence of curriculum implementation and student growth across various subject fields.

We suggest monthly conferences with the building administrator on portfolio use, evaluation, and problems. This can be accomplished by individual faculty conferencing with the administrator or teams by subject, grade level reporting on issues, and so on. If the administration conducts monthly faculty meetings, we recommend portfolio updates as an agenda item.

It is extremely important that learning goals and curriculum standards used in the school be produced to inform and drive curriculum development and assessment standards within each school. The administrator's role is critical in assisting and providing leadership for organizing curriculum content, establishing performance standards, and assisting staff in defining the major areas of study and competencies that students must demonstrate prior to graduation. Administrators must be the link that assists teachers in informing parents of portfolio practices and revised assessment strategies. Along with this goal, performance indicators for success in each particular school should concretely describe what students should be able to do to meet either local or state standards for graduation. Administrators should consider the following guidelines in assisting the development of a portfolio process:

1. Provide guidance to staff for local curriculum development.
2. Generate an educational vision of important learning goals to be developed and what the purpose of learning is in the school.
3. Assist teachers in reporting students' learning and their abilities to a) demonstrate understanding of core curriculum concepts and b) think and reason across a wide range of learning activities. In addition, assist teachers in gener-

ating real-life situations and assisting students to apply knowledge in dealing with them (science and mathematics standards).

4. Foster teacher instruction that nurtures students' imagination and creativity in a number of learning domains. (Tie to the National Council Teachers of Mathematics [NCTM] and National Council Teachers of Science [NCTS] as related to an inquiry approach to learning.) The link to learning standards will help demonstrate that students have met or mastered a specific principle.
5. Support teachers who use a range of teaching strategies and assessment processes to report diverse ways of learning and performance.
6. Encourage all school staff to use portfolios, and enlist the aid of support people (e.g., the librarian, media technologist, school counseling staff) in linking student portfolio work to their goals and objectives.
7. Develop a plan for comprehensive information gathering on local proficiency results that will be in concert with state mandates and community needs.

These efforts by the administrator will lead to an effective portfolio process.

Reporting to Parents

To improve and increase parental involvement in the learning activities of the school, a key factor is establishing partnerships with parents. Teachers and administrators must take an active role in seeking parent or legal guardian involvement. A critical variable is the sensitivity of school staff to parents' feelings of isolation from school. We must support them in overcoming their feelings of inadequacy about the learning process and that we do value their input. Communication between both groups must involve regular meetings and a flow of information via letters or newsletters to the students' homes. In fact, why not develop a parent team to help compose, edit, and distribute a school newspaper?

Teachers, working in groups, should develop plans to communicate with parents through traditional forms, such as newsletters

and telephone calls, as well as through more recent technology, such as e-mail, faxes, and the Internet. The reporting of student progress is more fully explained via narrative analyses, permitting fuller documentation of how students learn and a description of each teacher's expectations (Valencia, 1990).

Another approach provides parents with a weekly plan of curricular goals, homework requirements, grading practices, and ideas for parents to help their children with school learning activities. Supplementing this approach with adult teacher aides in the classroom increases the involvement of adults in the learning process. The time has come for parents to assist in the teaching of our nation's youth—it is a shared responsibility. However, school staff must be aware that parents work and often have other children at home, thus precluding their active involvement in school activities. The use of e-mail or voice mail permits brief messages to parents about their child and schoolwork requirements.

The increased use of parent-teacher-student conferences is a viable process for improving and increasing parent involvement in the school. A survey of parental working patterns, interests, and special or unique talents builds a file of potential classroom aides or volunteers. This file provides a resource for classroom tutors, mentors, and teacher aides. It also increases parents' involvement in the school activities of their children.

Parental support of school programs is often increased when parents understand the learning goals established for their children. Plan to discuss student learning activities in several subject areas, but be cautious in reviewing the total academic program of the student. Parental confusion could result from an information overload. It is suggested that you focus on areas where learning needs attention, such as writing, mathematics, or science. Rotate discussions from one conference to the next.

Samples of student work over time, such as a grading period, should be presented. Discuss student growth, or lack thereof, with specific illustrations from the portfolio. Help parents grasp the significance of reflectivity and student ownership of learning. Point out the importance of students to develop as learners with parental support. A portfolio conference report (see Resource B) will assist you with this conference. As suggested by Farr and Farr (1990), the

parent conference provides a unique opportunity to showcase your plans for helping the students become more effective learners.

A number of parents will emerge as articulate supporters to assist in moving to authentic assessment. Portfolios provide a bridge to aid parents in understanding the multidimensional aspects of learning evaluation. As advocates for a broader form of assessment, parents are a vital connection with the school board and other elements of the community.

Reporting to the Community

A number of interested constituency groups express a strong interest in school activities (e.g., sports, plays, debate, arts) and in learning-achievement test scores. The portfolio provides an excellent opportunity to report student learning activities in a nontraditional format—that is, authentic assessment of curriculum goals and practice within the school system. We suggest the following ideas for presenting portfolio results:

1. Portfolio-based science fairs open to the community
2. Electronic portfolio demonstrations to the school board
3. Portfolio displays at shopping malls, public buildings, and selected business sites
4. Have students create a CD-ROM version in school of their electronic portfolio for viewing at home.

Faculty must consider this effort as part of school public relations that inform the community of school activities. A student's portfolio presents a balanced portrayal of his or her growth in academics, extracurricular activities, and civic and social skills.

Summary

In this chapter, a number of suggestions were presented to assist faculty and administrators in implementing portfolios. While developing portfolios, other concerned partners must be included in the learning process.

3

Using Portfolios in the Classroom

Objectives

After reading this chapter, you should be able to

1. Develop a procedure for portfolio use in the classroom
2. Develop a model portfolio for the students
3. Develop alternative assessment procedures for the classroom
4. Develop a plan to share student learning growth with parents

Rationale for Using Portfolios in the Classroom

As the national school reform movement continues to gain momentum, the American schoolteacher searches for new approaches to enrich student learning and improve instructional content within the classroom. One avenue for this endeavor is the use of student-based portfolios for learning and documentation of devel-

opmental growth over a 13-year period of time for students in Grades K-12. The student portfolio provides a continuous record of student learning activities in each school year and evidence of developmental growth as it relates to a particular subject area. The portfolio provides tangible, concrete evidence—needed by teachers and others interested in a child's learning—that this developmental growth has occurred (Wolf, 1989b).

Portfolios in the classroom promote student-teacher collaboration in planning learning activities. It is a time for reflection on the part of both parties on the purpose of school. The classroom serves as a natural environment for the infusion of innovative learning. The portfolio can be a vehicle for this change.

In developing a classroom process for the use of portfolios, one must articulate a variety of steps that communicate to students teacher learning expectations and plans for the portfolio. Students must understand their responsibility for self-learning and commitment to maintaining the portfolio during the semester or academic year. A major tenet of portfolio use involves students' becoming more thoughtful regarding their selection of work for inclusion (Vavrus, 1990). When this occurs, students begin to self-select learning activities that help them understand what they have learned in the classroom. In developing a model for the classroom, the following considerations can be helpful for planning.

Classroom Considerations for Implementing Portfolios

1. Decide which curriculum objectives are to be related to the portfolio, and request that students insert content materials in that area.
2. Use expandable folders or three-ring notebooks with plastic sleeves to store portfolio contents.
3. Establish rules for housing portfolios. (Some teachers request that the portfolio remain in the classroom.)
4. Develop a cover sheet or table of contents outlining information found in the portfolio. This is particularly helpful in parent or student conferences.

5. Develop a regular time period for examining portfolios and rating their content.
6. Include the assessment procedures that you will use in scoring the portfolios or grading them. Most teachers prefer assigning a grade to the portfolio.
7. Require students to select at least one or two pieces of work per week or grading period for insertion in the portfolio.

In dealing with particular content areas, a variety of activities prove helpful. Collect work samples and evaluate student development over a period of time for any learning activity. For example, in science, students could write a preliminary paper on what they know about an upcoming topic, then conduct an experiment, keep lab notes, and give a summary report of their findings as portfolio evidence. In language arts, document and provide some evidence of accomplishment in grammar, spelling, sentence construction, paragraph writing, and so on (Carr, 1987). Other content evidence for social studies, art, and English should be included.

Portfolio Plans for the Classroom

Because portfolios are part of a developmental process, simply documenting the work that students do is not enough. All teachers must ask, "What do I want to accomplish by using portfolios in my classroom?" as they develop the process. In answering this question, it is helpful to define the content of the portfolio as it relates to documenting student progress, instructional support, and communication avenues with administrators and parents. A key factor is the use of portfolios to document learning and social growth over time. Portfolios tell us what students learned and how they learned it as they participate in learning activities. Students need to understand their own intellectual history as it relates to spending 13 years in public school. It also assists teachers in analyzing their own particular teaching strategies and performance over time.

Portfolios help link instruction, learning, and assessment into an interactive model that reflects on each area of study in a positive way. Portfolios emerge from a teacher-initiated curriculum rather than one based primarily on traditional testing. In essence, a more powerful curriculum than just isolated skills as measured by subject matter testing will emerge.

Purpose of Portfolios

Portfolios can be used in conjunction with performance-based assessment of students. They contain samples of students' work collected over a period of time. Generally, teachers and students work together in determining items that will be included in a portfolio. Items are placed in the portfolio at regular intervals, and evaluation is a continual process. Both student and teacher must reflect on items to be selected and included as part of the assessment of growth and learning.

Portfolio use is rapidly growing in popularity throughout the United States; a couple of state school systems (Vermont and Kentucky) have mandated portfolios for use in Grades K-12 to assess learning. As an alternative to traditional student assessment, portfolios provide the opportunity to assess the following:

- Student classroom work as documented over time
- Student cooperative and social skills that are not assessed through traditional testing
- Student growth in several academic content areas
- Student learning processes, not just test-based-outcomes assessment
- Student learning in a variety of areas (e.g., preparation for learning, sample drafts, and final product)

In addition, portfolios provide information important to teachers, counselors, school psychologists, and administrators regarding a child's performance over time, rather than just isolated fragments. Also, documentation is observed on learning habits in relation to study skills, task completion, and task assessment. In sum,

portfolios provide a much broader and sweeping assessment of student learning and document the evidence so that it can be reviewed at annual interview evaluations with teachers and parents.

Selecting Portfolio Content

The development of portfolios in a specific classroom or across grade levels requires that teachers decide which content areas need to be included in the portfolio. Typically, teachers prefer to focus on language arts, art, music, and mathematics. However, science, health, and physical education are being included in portfolios. In general, portfolios include content covering a variety of items, such as:

- List of books read
- Audio- or videotapes of student learning in various situations
- Record of group reading, group learning activities, oral presentations, and student-conducted interviews
- Written reports
- Videotapes of work
- Graphs, charts, and diagrams
- Student development notes related to projects
- Writing and work samples

The content of portfolios usually involves a selective array of subjects that refer to student activities conducted within the classroom. Reports, letters, drawings, diagrams, photographs, videotapes, reading logs, classroom tests, unit projects, and computer work are typically found in portfolios. In the language arts area, students select two or three of their best pieces of work during each grading period for inclusion in the portfolio. Work from other courses or subject areas could be included on a selective basis. Critical to inclusion of work in the portfolio is a self-evaluation or reflective comment on each chosen piece by the student. The final product at the end of the grade period or academic year should include representative samples from the year that show develop-

mental growth. Teachers will want to have students discard items from the portfolio on a regular basis as it may become too cumbersome for easy storage or access.

Reflections by students on their work must be included in the portfolio. Each content area identified needs to be reflected on, and students should be asked to justify their selected materials. A student's portfolio may include distinct sections representing language arts, math, music, or social studies. Research efforts indicate that most teachers prefer a single content area at the beginning of portfolio development (Cole & Ryan, 1995).

In determining the content area for portfolios, teachers need to respond to several critical questions. For example, what will other audiences want to know about student learning? Will the included documentation show aspects of student growth that test scores do not capture? What types of evidence best display student progress toward identifying school learning goals? Will the portfolio present progressive developmental evidence of student growth? When satisfactory answers have been determined by faculty and administration, you can then decide on a particular model or process to use for your portfolio. In Appendix A, a number of issues regarding portfolio development are cited for discussion.

Suggested Portfolio Models

In developing the following material, we have relied heavily on field-based experiences with several school systems in southwestern Ohio to develop portfolio models for use in selected grades. The students involved were in Grades 3 to 7 and Grades 9 to 12 in three different secondary settings. The students represented a typical school-based population and included minority representatives within the metropolitan area population. Portfolios were developed through careful teacher and student planning over a period of time. Faculty need to reflect and determine what specific content they wish to include in the portfolio for initial start-up activities. Also, evolutionary development occurs as students begin to put materials into the portfolio.

As teachers seek to develop a model for use in their classrooms or schools, the following types of questions should be addressed: What is your personal belief system regarding student learning? What do you believe the school experience should be? What is the goal of the teacher in facilitating student learning? What content area(s) must be recorded over time to show developmental learning? In addition, knowledge of the community and parental expectations for the school experience must be carefully reviewed. Parents and community values must be analyzed as you prepare the portfolio structure. For portfolios to be effective, the goals and instructional objectives of the schools must be identified as you develop a model.

The following models are quite helpful in initial start-up activities, and as teachers' experience with portfolios grows, the models can be modified to accommodate new situations. The portfolio models are defined as a content outline for illustration, and several are presented.

MODEL 1: *Urbana City/Fairborn City, Grade 1 Portfolio, Fairborn, Ohio*

I. Introduction

II. The four content areas
   - A. Self-esteem
   - B. Academics—language arts concentration
   - C. Social skills
   - D. Work study skills

III. Guidelines to implementation
   - A. Storage
   - B. Grading: good, satisfactory, unsatisfactory
   - C. Cost
   - D. Checklists

Developed by Cynthia Jackson, Urbana City schools, and Barbara Wingard and Diane Eilers, Fairborn City Schools, June 1993; participants in a Portfolio Institute, Wright State University, June 1993.

MODEL 2: *Schnell School, Grade 4 Portfolio, West Carrollton, Ohio*

		Topic
I.	Self-portrait:	Decision making
II.	Academic:	Language arts—journals, logs
		Mathematics—hands-on manipulatives
III.	Assessment data:	Test scores
		Teacher reflections
		Coopersmith Self-Esteem Inventory
		IOWA
		Academic achievement

Developed by Schnell School, fourth-grade faculty, March 1992.

MODEL 3: *Multi-Grade-Level Portfolio for Snowhill School, Grades 3 & 4, Springfield, Ohio*

I. Letter to grade-level teachers (fourth grade)

II. Cover sheets
   - A. Sheets to slip into front cover of three-ring notebook or have students design on their own
   - B. Rectangle for spine (student's name will go on this)
   - C. Dedication sheet (might want this to be last activity students do for this portfolio)

III. Attendance section
   - A. School calendar for perfect attendance and copies of attendance honor rolls can be kept here*
   - B. Certificates for perfect attendance and copies of attendance honor rolls can be kept here*

IV. Project evaluation form (for use by student, teacher, parent)**

V. Section on self-esteem
   - A. Interest and reflective inventories

(*continued*)

Model 3 Continued

- B. Family activities
- C. All-about-me activities
  1. Feelings
  2. Goals
  3. Autobiographical
- D. All-about-friends activities

VI. Drug abuse prevention

- A. Inventory of knowledge (can be pre-, posttest)
- B. Making responsible decisions (model)
- C. Refusal skills (model)
- D. Other drug prevention activities

VII. Information for teachers

- A. Articles and additional activity ideas
- B. Your own activities and ideas

* Need to have one of each of these (or similar project) before sending to next grade level.
** Need to have four of these (or similar project) before sending to next grade level.
Developed by Joy Johnson, Jewel McDonald, Barb Mack, and Michael Weaver, June 1993.

MODEL 4: Milton Union Elementary School, Grade 5 Portfolio, West Milton, Ohio

I. Title page and table of contents

II. Who am I?

- A. Introduce self
- B. Family
- C. Friends

III. Success at school

- A. Attendance
- B. Behavior
- C. Goals
- D. Study skills
- E. Learning style

(*continued*)

Model 4 Continued

F. Cooperative learning

IV. Academic success

A. Reading

B. Writing

C. Science and health

D. Social studies

E. Math

F. Journal responses

G. Speaking and listening record

H. Special projects

I. Competency records

V. Lookin' back an' movin' on—reflections on the past year

Developed by faculty, Milton Union School, June 1993.

MODEL 5: *Multi-Grade-Level and Elementary, Southwest Ohio Schools*

I. Introduction

A. Title page (student designed)

B. Statement of purpose

C. Student reaction (September and June)

D. Waiver of confidentiality (including sign-out sheet for reviewers

II. Who I am

A. Interest inventory

B. Thoughts about junior high (September and June)

C. Work habits (inventory, personal, social skills)

D. Decision-making skills (exercises to develop skills for dealing with anger, conflict resolution, refusal to participate in harmful activities)

E. Self-concept activities (Coopersmith Self-Esteem Inventory)

(*continued*)

Model 5 Continued

III. Goal setting and review
  - A. Academic
  - B. Behavioral
  - C. Attendance
  - D. Extracurricular (social)
  - E. Life goals

IV. Academic and reflections
  - A. Language arts (predominant)
  - B. Science (best lab reports, tests)
  - C. Social studies (projects, travel itinerary, tests)
  - D. Health/Quest (service learning projects)
  - E. Math (projects, tests, placement tests, Mathcounts)
  - F. Music (solo or ensemble contests, concert articles)
  - G. Art (pictures of projects, evaluations, etc.)

Developed by Joan Schindler (Incarnation); Alvine Wilson, Mary Galdeen, Deborah Carey, Rae Ann Herman (West Carrollton Junior High School); and Cindy Hill (Weisenborn Institute), June 1993.

In Models 2, 3, 4, and 5, a variety of elementary school models are illustrated. Each model was developed by practicing teachers after study of portfolio theory through selected published literature. Careful analysis by the faculty in these schools permitted development of a portfolio model to meet unique school needs.

MODEL 6: *West Carrollton Junior High School Portfolio Model, West Carrollton, Ohio*

	Topic
Section A	Career awareness
Section B	Self-portrait
Section C	Academic (language arts, health)
Section D	Drug education (Quest)

Developed by seventh-grade faculty, March 1992.

***MODEL 7:** Senior English Class Portfolio Model*

Purpose: Self-evaluation of skills and growth in writing of reading/writing response patterns

I. Writing
   - A. Choice of three essays
     1. Literature response
     2. Personal essay
     3. Defense paper
     4. Cause-and-effect paper
     5. Comparison paper
     6. Classification paper
   - B. Peer edit form for each paper
   - C. One required research paper
   - D. Reflection on research paper
   - E. Choice of one essay test on literature (list)
   - F. Reflections on why each paper and test was chosen

II. Reading
   - A. Reflections on any literature pieces (list)
   - B. Reflections on why RDGs and response chosen

III. Summary
   - A. Self-evaluation of writing progress
   - B. Analysis of peer edit, suggestions taken/not taken with explanations
   - C. Analysis of strengths/weaknesses in writing
   - D. Evaluation of RDG responses (themes/patterns)

IV. Guidelines
   - A. Cost: minimal (folders/boxes)
   - B. Storage: closed cupboard
   - C. Evaluation: points for work in PF
     points for evaluation of work included
   - D. Administration: copy to principal/supervisor

Developed by Mari Lou Moore, Carol Dean, Jan Jacobs, David Roushy, June 1993, representing three southwestern Ohio Schools.

MODEL 8: *Lima City Schools, Grades 10–12 Alternative High School Model, Lima, Ohio*

I. Introduction
   - A. Title page
   - B. Pre-reflections on why and importance of doing daily journal
   - C. Post-reflections on why and importance of doing daily journal

II. Student Portrait
   - A. Attendance goal 90%
   - B. Topics for daily log
   - C. Rate attitude (104)
     (Manners, willingness to work, completes assignments on time)

III. Educational Plan
   - A. Proficiency test, drug survey, and self-esteem test results
   - B. Intake forms, test of achievement in basic skills (TABE) results
   - C. Student goals
   - D. Copies of exceptional work

IV. Career Plan
   - A. Career and education plan (part of intake)
   - B. Short-term and long-term goals

V. Conclusion
   - A. Reflection—goals for infusion back into regular schedule of classes
   - B. Evaluate short-term goals
   - C. Expectations for future

Developed by LIMA OWE faculty, November 1991.

***MODEL 9:** High School Band Portfolio Components*

- Weekly journal entries
- Concert reviews
- Scale mastery test
- In-class performance test
- Blind seating auditions/quarter performance exams
- Personal performance tape

From Chaminade Julienne High School, Dayton, Ohio 1996–1997; Lisa Beringer, Band Director.

***MODEL 10:** High School Choir*

- Self-evaluation "My Voice"
- Music biography
- Personal performance tape
- Part tests
- Projects/melody composition/theory
- Self-reflections and goal setting
- Individual/group assessment
- Ensemble rehearsal critique
- Semester reflection

From West Bend High School, Wisconsin 1996–1997; Karen Wysocky, Choir Director.

In Models 6, 7, and 8, the ideas of selected teachers in a junior high school, a senior high English class, and an alternative high school are presented. Portfolios used with the secondary grades need further research and development, and secondary-level teachers are the best people to revise teaching practices via studying and implementing portfolios. Also, we have included two models that focus on high school band and choir (see Models 9 and 10).

Portfolios in Practice

To supplement portfolio efforts in the classroom, alternatives to traditional assessment practices must be found. For some, portfolios represent new report cards and affect the way students are graded (Jongsung, 1989). One example is the shift to progress reports and additional parent-teacher-student conferences. In fact, the conferencing approach allows for in-depth discussion of growth in a selected academic area (see Resources B and C for sample conference forms). It is also possible to specify areas of growth and particular remedial needs for the student. However, in the future, it will be necessary to move beyond simplistic folders with randomly collected artifacts of learning. The future requires use of electronic portfolios and sophisticated approaches for data collection and analysis.

Instructional Materials: A Format With Flexibility

Assembling a great deal of material from every student can create a huge amount of paper, folders, tapes, and other documentations of the students' work. How to best present this variety of material in a format that aids ease of access, portability, and presentation challenges both teacher and student. Creating an understandable, usable, and user-friendly format for the student and teacher is necessary (Murphy & Smith, 1990). With so many suppliers of office materials available to the consumer, the possibilities are endless. In working with portfolio practitioners, a few examples of school usage have appeared in the classroom. Certainly, portfolios can be found in various shapes, containers, sizes, folders, and binders. Keeping the work accessible to both teacher and student is a primary concern. Because of the volume of material stored in the process portfolio, it tends to be (and needs to be) large and flexible.

File folders become cumbersome with so much material in them, and losing things that slip out remains a problem. Many portfolio programs use this type of folder because it offers space to print on

both sides of the folder and, much like a doctor's office, keeps a running track record of the student. This folder is the least expensive. Storage in a file cabinet works well, and the cabinet does not take up much space.

Some teachers use accordion-type folders with string ties. Although taking up a little bit more space than a simple file folder, this type lends itself to being divided, with individual file folders for each subject area. Displaying or even working with such a folder tends to create an expansion, or sometimes an explosion, of paper and projects because in order to access anything from the folder, almost everything needs to be taken out to analyze the contents, creating a potential mix-up situation. These types of folders make it difficult to keep tapes, photos, and computer disks sequentially organized. Storing, toting, and transporting large, overstuffed, accordion-type folders en masse likewise can be problematic. They create a stacking hazard without the use of a box or crate. They also are hard to store on shelves, in file cabinets, and over time.

Pocket folders and Duo-Tang™-type folders are a cross between products that offer the accessibility of a folder with the permanence of a three-ring binder. There is a limit to the amount of material that will fit and a lack of display presentation space with the pockets. Of course, slippage from the pockets is a reality everyone has faced—the classic "it must have fallen out of my folder" excuse. Cost advantages, however, are obvious.

The three-ring binder presents the best in terms of format and flexibility. Using dividers and other three-ring inserts, one can create a versatile and usable portfolio. This also allows the student and teacher to pull pieces for the product portfolio, which can be a smaller three-ring binder portfolio. The three-ring binder, more than any other method, gives a finished appearance to everything that is placed within it. This is a clean approach with consistency that also gives the student opportunity for endless creativity. The student can create covers to be inserted, dividers, tabs, and a multitude of presentation approaches. Each student in the class can have an individualized portfolio with a somewhat standardized format for the class. Using binders also creates easy storage possibilities. Commercial shelves can be used for long-term storage. Price flexibility

is a plus. A school could purchase binders in bulk and have them printed with the school logo; they also can be sold in the school bookstore for easy accessibility for all students. Students can insert hand- or typewritten pages, photo pages, audiocassette and videocassette tray pages, or anything else that presents and displays their work. The possibility of endless, easy, understandable variations creates educational freedom and potential for both teacher and student. Plus, the sliding-cost factor can make this type of portfolio available at all economic levels.

Summary

In this chapter, we have presented a rationale for portfolio use in assessing student academic work over selected periods of time. A number of schematic portfolio outlines were illustrated for use in K-12 school classrooms. Also, a number of suggestions for portfolio format were illustrated and explained.

4

Empowering Portfolios With Technology

Objectives

After reading this chapter, you should be able to

1. Explain both the potential and power of technology in the classroom via portfolios
2. Identify various technologies in the classroom
3. Discuss the current evolution of instructional materials and describe their influence on the future of high-tech portfolios of the future
4. Identify examples of successful school use in combining technology and portfolios
5. Identify emerging legal issues and ethical concerns regarding electronic portfolio development

Introduction

A teacher can no longer play the role of authority and dispenser of knowledge. Interdisciplinary and learning outcome-oriented

curricula require more collaborative work and team teaching. Authentic assessment of real problems and actual tasks performed by students is essential. Portfolio implementation and development empowers students to take more responsibility for managing their own learning. Learners build on their out-of-school as well as in-school interests, experiences, and knowledge. When using the world, rather than just the teacher, as their resource, students begin to navigate their own lifelong voyage of self-directed learning. When using technologies currently available, teachers have the opportunity to set up a learning environment that allows students to build a ship that can sail the seas of lifelong learning, using portfolios as both a map and a compass.

> Teachers are seeking ways of setting up learning environments that are more realistic than traditional classrooms. There are many reasons for this emphasis, including the need to help students become better problem solvers. Computers and related technology help create realistic problem-solving situations, as well as providing tools to help pose and solve problems. (Kearsley, Hunter, & Furlong, 1992)

Releasing the power of technology in the classroom via portfolios enables the teacher to reach more students effectively and efficiently, while engaging them in a more realistically meaningful process of learning.

The Potential of Technology in the Classroom

American classrooms established a computer presence during the mid-1980s, and since that time educators have searched for strategies and techniques to integrate computer-based technology into the schoolhouse. Educators discovered early on that computers could potentially increase their productivity through the use of word processing, database programs, spreadsheets, and graphic capabilities. With this technology, the school and the classroom are more efficient, providing extra time for student-centered interactions. Computers, when used correctly, reduce the time spent on

the tasks teachers perform on a daily basis: keeping grades and taking attendance, creating and scoring tests, writing letters to parents, and keeping records of all kinds. Technology's power, however, goes beyond simply increasing classroom management efficiency and teacher productivity. Using technology via portfolios in the classroom integrates a learning environment, with the potential of creating a more realistic and educationally beneficial adventure for both the student and teacher.

The history of school use of computer-based technology is relatively short. Most of the technology used during the 1980s and early 1990s was isolated and primarily noninteractive. If anything, most computers in education were used as expensive typewriters and fancy dictionaries or encyclopedias. The biggest part of collaborating student learning in the classroom was limited to fighting over who would get to use the computer next. Typically, schools fostered single stand-alone computers not connected to any kind of network; computer labs were established in centers rather than scattering the computers throughout classrooms; and multimedia tools only supported lecture-type activities of the teacher as opposed to individual student research and exploration, as well as production. Even telecommunication was difficult to implement as classrooms seldom were equipped with telephones, and district policies and/or systems lacked easy access to the few that existed in a school. The adventure of technology-enhanced learning proved to be a nightmare for many administrators, teachers, and students—often an expensive nightmare.

The Power of Technology in the Classroom

Since the mid-1980s and the initial technology exploration, the uncharted territory of technology has emerged from the exploring stage to a developmental stage. More and more classrooms are networked together with other classrooms, other schools, other communities, even other countries. Fiber-optic networks, cable in the classroom, teleconferencing, and satellite broadcast informational systems are all becoming readily available. Hardware prices have plummeted and their upgradeability has vastly improved. New

software now encourages critical thinking, decision making, and development of materials. Assessment of student progress is changing with the focus now on the process of learning through oral and written communication and less on student performance with paper-and-pencil tests (Kearsley, Hunter, & Furlong, 1992).

The scene is changing with the market penetration of computer-based technology in schools reaching amazing levels. According to Market Data Retrieval (Holt, 1994), there is an intensified interest in educational technology in K-12 schools with the ratio of microcomputers to students continuing to decrease to a 9.6 national average. Since 1991, there has been astonishing growth in the use of CD-ROMs, local area networks, and videodiscs. Growth forces causing this change include increased (though still sporadic) funding, concern about equal access or equity issues, recognition of the necessity of technology literacy skills, the "un-textbook" classroom environment, and the growth of interdisciplinary curricula.

The power of educational technology also includes its ability to teach, and educators began using small cooperative learning groups to solve problems. Electronic telecommunications networks extend beyond the walls of the classroom to include global resources. Ideas can be presented to entire classes using tools like LCD projection units. Customized individual student goals and learning styles can be accommodated with the unleashed flexibility technology offers both the student and the teacher.

The Internet

The Internet's escalation—financially, politically, socially, and generally—indicates that the rate of improved technological acceptance in schools is unprecedented. According to recent data, Internet access increased from 70% of all schools in 1997 to 85% in 1998 (*1998 Technology in Education*, Market Data Retrieval, a division of Dun & Bradstreet, Inc.) The 1990s witnessed the cutting in half of computer/student ratios. More and more schools are dedicating telecommunications access lines. Computers, once in centralized labs, are moving to individual classrooms. Networked multimedia computers with CD-ROM drives are replacing older computers.

Technology in the Classroom

During the last 15 years, schools witnessed amazing changes in the type, role, and function of instructional materials. The infusion of a variety of technologies into the classroom allows educators the freedom to experiment with innovative teaching and assessment strategies. Students construct new knowledge rather than just being passive receivers of knowledge. Computer-based technology permits students to truly take more responsibility for managing their own learning. Previous materials were text-based and linear, whereas new materials include audio, still, and moving images that jump from segment to segment based on user interest and need. Bringing the learning process alive and using the portfolio to document the products of this process requires various technologies. Today, a great deal of technology (both hardware and software) is available in many forms. When first exploring this technology, the terminology can become daunting.

Modem. A modem is used to connect a computer to a remote network using a telephone line. The modem converts the computer information, which is digital data, into a form that can be accepted by the telephone, which requires analog data. The era of digital telephone systems and modems is fast approaching.

LANs and WANs. Local area networks (LANs) and wide area networks (WANs) are growing in scope and usefulness. A LAN or WAN connects computers without the use of telecommunications hardware. The computers are wired together and a number of configurations are possible. A LAN might be within a classroom or throughout an entire building. A WAN usually encompasses a larger area, such as an entire school district, and often includes community entities like libraries, museums, and hospitals.

Servers. Servers come in many sizes and varying degrees of complexity. Basically, a server is a dedicated computer that manages the network. Servers often house data and permit the sharing of resources such as printers. Integrated learning systems use a server to manage instruction, and many cooperative efforts can be supported by

servers facilitating work groups who need to share data and collaborate with each other.

School networks. Using this technology, some of the first school networks typically were used for transferring and sharing administrative data like test results, grades, attendance, and reports. Newer software gives educators desktop capability to enter grades, analyze progress, and send personalized letters to parents. Teachers with modems and computers at home now also can access student information, reference materials, or curricular databases at any time.

On-line databases. Information retrieval from on-line databases is growing in popularity as the ease and comfort of virtually going to the library at any time of day via your home or work computer increases. Access is sometimes limited to membership or enrollment with an Internet service provider, such as an America Online™ account, or is available through student or staff status at a university. Global networks like the Internet open communication doorways. Many obstacles need to be overcome in using telecommunications in schools, but the value of accessing information at any time and from any place, and the ability to communicate with other educators and students around the world is hard to deny. The Internet and its many search engines serve many educators as their de facto standard for research.

Global educational networks. Telecommunications hardware such as a modem and computer, and communications software, will link educators into a global educational network community. Networks already are specifically designed to link teachers and schools together. Forums on various topics, projects, and issues are available for both teachers and students. Commercial networks such as CompuServe™, AT&T WorldNet™, America Online™, and Scholastic Network™ have also begun to include menu opportunities for learning, teaching, and research.

Optical media. This term currently refers to laser discs and CD-ROMs. The advantage of optical media is random accessibility.

This means that unlike a videocassette or an audiotape, the user can simply move to any image or moving sequence instantly and the time spent moving back and forth on a tape is eliminated. Optical media is made of plastic and coated with a shiny, durable finish designed to reflect light from a laser beam. The beam reads the information embedded in pits on the surface of the disc. When the laser beam strikes one of these pits, the light is reflected to a mirror and then onto a decoder in the player. The disc then converts this reflected light into audio, video, or command code, depending on data originally stored on the master (Floyd, 1991).

Laser discs. These look like a cross between a 12" phonograph album and an audio CD. One side of a videodisc can contain 54,000 numbered images or frames and they can be frozen in place to show a still picture or can play the images continuously to show moving footage. This format, although still available in many schools, is evolving into a smaller, more compact medium.

Zip™/Jaz™ cartridges. This medium by Iomega Corporation has increased the amount of data someone can "walk around with" in today's multimedia world. Given that both the amount of data space is increasing and the cost of storage media is decreasing, anyone can now create the kind of sound and video multimedia presentation not possible even a few short years ago.

CD-ROM. CD-ROM, which stands for compact disk-read only memory, is familiar in size to most people, as music compact disks are well established. A CD-ROM can hold approximately 400 high-density, 3.5 inch disks of information or more than 180,000 pages all on one side. CD-ROMs contain words, images, and graphics as well as sound and video. Just as the equipment needed to play a videodisc is a laser disc player, CDs likewise are played on either internal or external CD players. Recently, the drastically reduced cost of CD-R and CD-RW drives has provided many schools the opportunity of "burning" their own CD-ROMs. This means 650MB of digital storage space in a worldwide universal distribution format—a major step toward bringing digital portfolios to kindergartners through professionals.

Scanners. These have become commonplace because of their low cost and increased connectivity. High-quality, expensive scanners of the past are now available at a fraction of the cost. The portability of equipment, and its ease of use, enables even the youngest of students to create digital images of their work. Visioneer's PaperPort™ line of scanners are easy to use and affordable.

Digital cameras. Digital cameras create the opportunity for teachers and students to digitize their work. In the past, file size was a portfolio liability, but with advancing software standards such as QuickTime, RealPlayer, MPEG, and increasing storage capacities, this concern is quickly becoming a moot point. Imagine capturing students in a class presentation and saving the performance in their digital CD-ROM portfolio—well, imagine no more! The world of multimedia awaits the learner.

Multimedia. The term means just that, a combination of a variety of formats—still and moving images, video, sound, text, and graphics. The decreasing cost of multimedia supportive equipment and multimedia development tools gives teachers the capability to produce multimedia materials such as portfolios. The combination of various media and software formats enables students to learn more spontaneously, more naturally, using whatever sensory modes they prefer. Student experiences can be captured, documented, and shared via multimedia portfolios. Students take an active role in their learning as the development of such a portfolio occurs.

What we say today about technology will be changed tomorrow. Issues of storage, access, cost, size, bandwidth, and usability are evolving into as yet unimagined formats.

A number of software packages and/or formats have emerged over the years that greatly enable both teachers and students to create, manipulate, annotate, evaluate, document, and share the multimedia portfolio. Many of the following software examples can be viewed or reviewed at these Web sites:

- Adobe® Acrobat®: www.adobe.com
- Grady Profile™: www.aurbach.com
- Grady eJournal™: www.aurbach.com

- HyperStudio™: www.hyperstudio.com
- Iomega's Buz™: www.iomega.com
- Iomega's RecordIt™: www.iomega.com
- PowerPoint™: www.microsoft.com
- QuickTime™: www.microsoft.com
- Scholastic's Electronic Portfolio™: www.scholastic.com
- Sunburst's Learner Profile™: www.sunburst.com
- Visioneer™: www.visioneer.com

Multimedia portfolios can add an important complement to the total assessment of the learner. Given currently converging standards of optical and digital media, the opportunity exists to infuse the process of integrated individualized curriculum development with collective portfolio evaluation efforts. Using the technology of today, we can reach the educational goals of tomorrow for students, teachers, administrators, schools systems, communities, and beyond. However, an extremely personalized, active stay-in-touch-with-the-student attitude must be developed and maintained along with the technology.

High-Tech Portfolios With High-Touch Assessment

Assessment of learning activities while using all of this technology can become more difficult and complex. However, as the use of computer-based technologies and information retrieval systems becomes more integrated and readily available, its use by teachers as well as students will become easier. When the automobile was first developed, most horse riders used the excuse that driving a car was more difficult and complex. Yet, as more and more people began driving instead of riding, the automobile became a way of life, seamlessly integrated into the fabric of society. Technology is experiencing the same phenomenon in education.

The kinds of skills students now are being asked to demonstrate more and more in today's world include gathering, organizing, and sharing information; analyzing relationships; testing hypotheses; and communicating results effectively and efficiently. Traditional

testing techniques no longer provide a clear evaluation of these desired learning outcomes. Computer-assisted portfolio assessment provides a more appropriate and adaptable model in student assessment. A portfolio software system such as the Grady Profile™ helps the teacher organize the multitude of data accumulated about their students. It provides insights and highlights student strengths and needs. One feature of the Grady Profile™ is the student profile. This contains many aspects of students that relate to their capabilities, scholastic performance, and personal growth—family information, medical data, behavior at schools, standardized test results, reading and writing capabilities, math skills, and so forth. A hypercard stack identifies each student and provides information pertinent to that learner's identity. Each card can provide artifacts like writing samples, video samples, teacher remarks, oral reading samples, penmanship, and cross-curriculum outcomes and team projects (Grady, 1992).

Although the majority of portfolios today tend to be mostly text based (student writing), the addition of videotape clips, audiotapes, still photographs, and artifacts expands and clarifies portfolio development. The immediate concern is usually how to manage the mechanics of storing such varied types of media. With the presently converging digital standard of optical media and desktop multimedia revolution, this concern is vanishing. Everything from writing samples, video clips, audiotapes, still photographs, and artifacts to evaluation comments, progress notes, conference summaries, and anything else in a student portfolio will fit on one compact disc. Currently, CD-ROMs are somewhat expensive and complex to create in most schools; however, their capability and affordability are rapidly becoming feasible, and within a short time, students will archive their portfolio materials on a CD-ROM and press inexpensive copies for family and friends as well as job and college interviews.

Currently possible and reasonably affordable is a supplement to the traditional text-based portfolio: a second collection placed on a videocassette or a videotaped multimedia presentation. A video camera permits convenient taping of events and artifacts, as well as computer text and graphics. Simple editing decks allow for add-

ing in clips of student performances or presentations and character generators provide a means to add words as well as graphics to video segments. Voice-over sound capabilities can even allow the addition of descriptive and reflective statements by the student producer or teacher.

Teachers now create portfolios of their teaching performances as well as experiences, and these professionally intimate portraits are used in their annual performance evaluations. Certainly an issue for consideration by both the teacher and the student is access and training in using video equipment, especially video editing equipment. Although not difficult to edit, videos do require some minor orientation to the equipment, and access should be available before school, after school, and on the weekends.

Regardless of which technological format you choose, whether multimedia, CD-ROM-based, or edited video, placing portfolios in an electronic format is challenging and requires more time at first. As the learning curve begins to accelerate and both the teacher and student begin to develop and exploit both the potential and power of technology, they will soon see the results are worth the effort as another evaluation dimension is provided.

Evolution of Instructional Materials

As this entire complex maze of various technology mediums and formats continues to unravel, the evolution of instructional materials explodes every day. An inverted pyramid of current applications demonstrates that a large base of word processing users has already moved into desktop publishing. Soon, if not already, these desktop publishers will become presentation authoring designers and multimedia developers. This sets the stage for hypermedia and Internet-linked applications. Presentation software such as PowerPoint™, Astound™, and Persuasion™, and authoring programs like Authorware™, Director™, Icon Author™, and Ten CORE™, facilitate the design, development, delivery, and management of mediated presentations and computer-based instructional programs.

School Examples

Five Points Elementary School, Fairborn, is Ohio's largest elementary school with approximately 1,500 students. In spite of financial difficulties, Fairborn City Schools made a commitment toward technology infusion throughout the school district. Although most of the technology support comes from an active PTO and involvement with business partners, the district also reallocated resources based on this recognized technology priority.

Five Points has 304 computers and approximately 1,500 students, with a ratio of 1 computer for every 5 students. Each classroom hosts an installation of 4 networked computers. Two dedicated math instruction labs contain 32 and 36 Macintosh computers, respectively, with CD players and printers, and 3 Macintosh minilabs in Chapter 1 classrooms. The Information Technology Center, formerly the Library Media Center, houses a large collection of optical media (150+ CDs and 125+ laser discs) along with a typical print collection. A portion of the center is devoted to a technology lab. All students in Grades K-6 visit the center at least one period a week. If schedule time permits, open times in the center are scheduled for students to do research and exploration. Students and teachers use the technology lab when other classes are in the center.

Christopher Columbus School in Union City, New Jersey, and Bell Atlantic work together to connect schools and homes with computers and high-speed networks. The project involves a population of 135 children and 20 teachers and administrators. Each participant has a 486, 33 MHz PC at home, and there are 40 computers spread throughout the school. Union City School District in New Jersey has the highest number of minority students and is the most densely populated locality in the United States. The Union City School District is in the midst of a massive curriculum restructuring effort and is moving toward a whole-language approach. The first phase of the project has demonstrated that technology has been successfully integrated as a tool to accomplish the goals of the curriculum. There has been a positive impact on writing, and there is continued growth of thematic planning and interdisciplinary units. Teacher and student attendance has improved, Early Warning Test Scores (EWT) have risen, homework has been turned in,

and students have demonstrated more interest in classroom activities (Grady, 1994).

The Edison Project, a privately sponsored national effort to create innovative schools across the country, uses electronic portfolios as a major component to the assessment process for their schools. Every student maintains a cumulative digital portfolio of their work—written materials, voice recordings, videos of student performances, and multimedia presentations. These electronic portfolios are shared through the Common, a network of computers throughout the school, as well as in every student's home. All students in first grade and above have personal computers installed in their homes, which enables them to retrieve and complete homework assignments, collaborate with other students on projects, communicate with teachers, do research via electronic libraries, and update their portfolios.

Technology in the Future

Educational technology helps motivate students to learn by making learning more fun. It also gives students greater understanding in context and enables them to take a more active role in their learning. Teachers are finding that students enjoy learning using technology for many reasons, including the following:

- Self-paced learning
- Easy access to information
- Learning becomes more fun
- Independent, discovery learning

This combination of elements enables students to learn more spontaneously and more naturally, using whatever sensory modes they prefer. Combining media elements with well-designed interactive exercises means that students extend their experience. By making discoveries on their own, they are no longer sitting passively while information is fed to them. As students take an active part in their learning and use their senses to experience new situations, they

begin and complete their assignments with a broader, more in-depth understanding (Floyd, 1991).

Market trends indicate a growing infusion of instructional technology in education. Nineteen of 22 states that are textbook-adoption states have revised their definition of *textbook*, and many now include selected videodisc series as textbooks. Hand-held information appliances are finding their way into the schoolhouse. Multimedia curricula is mushrooming along with massive numbers of multimedia materials. Software firms traditionally in the school market are testing the home market. Internet fever rages on.

There are bottlenecks to technology integration in K-12 schools. The age and mix of technology in the schools is overwhelming and problem-ridden, and most school buildings are not physically able to easily incorporate technology. There is a low density of technology in schools, computers are in labs rather than classrooms, and there is a general lack of technical support for technology users. In addition, there seems to be a lack of consensus among the stakeholders about what should be done about technology. Schools are attempting to make the transition to knowledge acquisition and mentoring, yet there are poor models of integration into the curriculum and weak staff development programs. Industry is responding to these problems by stepping up partnering opportunities and in some cases retrenching.

Technological advancements affect the way we prepare and train teachers. The world demands educated teachers who can use technology effectively in the teaching and learning process. New skills are needed in the classroom. According to the National Council for Accreditation of Teacher Education (1997), computer-to-student ratios have declined steadily from 50 to 1 in 1985, to 20 to 1 in 1990, to an estimated 9 to 1 in 1997, affecting traditional classroom practice and even the culture of the schools. Preservice and inservice educators are being encouraged to "tell their stories" in reflective and creative ways using various technologies including electronic portfolios.

Many teacher education preparation programs nationally are focusing on instructional methods that integrate technology into the classroom and specific disciplines. Results are emerging that show an impact on K-12 classroom dynamics. Student teachers (both

preservice and K-12) are tending toward more active forms of learning; collaboration and cooperation are occurring more effectively; and instruction is becoming theme-based, supporting constructivist teaching.

Legal Issues and Ethical Concerns

Concerns regarding security, privacy, intellectual property rights, acceptable-use policies, copyright, and access loom as potential issues to innovative and creative development of technology products including electronic portfolios. The Digital Millennium Copyright Act was signed into law in October 1998, and it has brought to light significant copyright-related issues that could impact the use of multimedia, the Internet, and the development of portfolios. It is imperative that educators become aware of the nuances of copyright law as it refers to the development of teacher and student-made materials.

Strategies for ensuring the security of equipment, access to student and faculty information, and parental approval needed for visuals such as student pictures, class group photos, video recording of performances, and personal family information should be developed carefully and sensitively.

Acceptable-use policies should be examined to determine if the development of student and faculty materials is covered and supported. As more and more items are created, issues of "who owns the material" will begin to emerge, especially if the materials are developed with school-owned equipment, housed on school servers, and/or distributed over school networks.

Portfolios in the Future

Even though the current climate for schools producing their own CDs is slowly improving, educators should consider the eventuality of creating optical media, particularly in the creation of student or class portfolios.

Other issues to be considered in the future regarding the spread and growth of educational technology via portfolios can also be

attributed to the national focus on school restructuring and educational reform. Educators must keep in mind that computer-based technology and portfolios will not transform education; rather, schools must redesign and renew themselves to make the best use of the potential of portfolio technology. Schools should consider future development and management of their digitized materials. Because their storage space is enormous and the product can be searched rapidly and electronically, CD-ROMs can be developed to disseminate archived materials such as mediated portfolios, portfolio support materials, and internal collections of written work. CDs are excellent storage mediums for quality video footage. Video footage of school events, productions, and student performances can be stored on one disk for a video yearbook. Video can add visual and audio realism to student and teacher portfolios.

Web-based portfolios are emerging as assessment tools that provide ongoing development and interaction capabilities. Concerns focus on access, legalities, and the need for an end point—a finished product. The irony is that while we are speeding into the digital millennium, most teachers still do not have access to a classroom telephone.

Summary

Technology-based portfolios support both individual, self-paced learning as well as large-group instruction. The combination of pictures, text, and sound make laser discs, CD-ROMs, and other optical-based media more usable by people with different learning abilities or preferences. Some learners understand better by hearing or seeing than simply reading. Applications might include full-motion presentations of events such as a band performance, large collections of student artwork, complete in-class presentations, or examples of chemistry experiments. All of this and so much more can be possible simply by releasing the potential and power of technology in the classroom via portfolios.

A common barrier to the development of electronic portfolios is the need for initiating early-on and constant collection of materials, such as videotaping events as well as activities for future editing,

making audiocassette tapes of interviews, and collecting and digitizing documents, photographs, and examples of support materials. The last 2 or 3 weeks of the school year is obviously not the time to begin gathering materials for creating digital portfolio. The process needs to be an ongoing effort planned well in advance. The same problems exist for teacher portfolios. There is a need for prior planning and archiving of materials in preparation for the final document.

5

The Professional Educator's Portfolio

Objectives

After reading this chapter, you should be able to

1. Develop and implement a professional teaching portfolio
2. Develop a colleague-review strategy for your portfolio

Introduction

Concurrent with student portfolio development, educators should consider the professional portfolio process to demonstrate evolving professionalism. In our learning society, state mandates require educators to account for their personal effectiveness and grasp of new knowledge. A professional educator's portfolio offers a promising solution for documentation of teaching effectiveness and professional growth (Seldin, 1991). Tangible and concrete evidence can be provided to administrators responsible for staff evaluation. Portfolios also provide a personal sense of accomplishment and

individual growth. Important for professional self-assessment, educators must seek new avenues for professional enrichment and teaching improvement.

Professionals in such fields as architecture, art, and engineering have constructed portfolios to document expertise. As with the learning process, teaching is multidimensional and requires authentic assessment to accurately captivate the rich process of instructing. A teaching portfolio, carefully constructed, validates instructional success. Portfolios bring a variety of feedback sources on course design and performance into a meaningful configuration. A teaching portfolio serves as a communication tool for identifying teaching accomplishments. Thus, portfolios serve as a communication tool permitting educators to mold the document around accomplishments.

Following are two purposes for the construction of educator portfolios:

1. *To identify professional growth.* The process portfolio clarifies for the developers answers to such questions as

- Where am I professionally?
- Where have I been?
- Where am I going?

As Min Hong (1994), a New York City public schoolteacher, explains,

> Even though I teach first grade every year, every year is different. So my portfolio helps me see how I'm evolving as a teacher. It helps me see where I've been, where I am, and—because I set goals—where I'm headed. I ask my students to keep portfolios, too, so I live the life I teach. (p. 50)

Professionals take ownership of their career path and design their future courses. This type of professional portfolio is usually more informal, selective, time limited, and self-reflective.

2. *For personnel decisions.* When portfolios are constructed for personnel considerations, caution must be taken to promote educator

ownership. Portfolios place the initiative for documenting and displaying teaching in the hands of the person who is doing it: "They put the teacher back in charge . . . selecting, assembling and explaining portfolio entries that accurately represent actual performance" (Seldin, 1991, p. 14). The intrinsic reward of constructing portfolios must be pursued. Thus, portfolio construction for personnel use is usually more formal and comprehensive.

Professional Portfolio Guidelines

In preparing a professional teaching portfolio, content inclusion must be considered. A professional educator portfolio incorporates a written description of a teacher's major strengths, teaching achievements, professional development activities, and professional career goals. Its primary purpose is to provide the following:

1. Evidence of teaching effectiveness (student and peer reports, syllabi)
2. A structure for reflection on self-growth plans
3. Evidence of professional growth during one's career

Portfolios present selective evidence of teaching accomplishments and quality data about serious efforts to improve performance and foster student learning.

First, the purpose for doing the portfolio must be clarified. The teacher needs to consider who will examine the portfolio and for what purposes they will read it. A portfolio constructed for oneself will remain basically in the author's domain, whereas a portfolio developed for personnel appraisal will be reviewed by others, which calls for higher clarity. After establishing the purpose, the next step is identifying strengths to be highlighted within the portfolio. Focus on positive teacher behaviors, characteristics, and accomplishments. The materials need to be arranged in a professional manner and constructed so the reader can progress through them easily. Large quantities of information can be arranged graphically (e.g., grades, evaluations from students). When multitudes of similar materials are significant, perhaps random sampling of items will suffice.

Several considerations should be reviewed before actual construction takes place. First, remember to include a description of your teaching philosophy and future goals. Decide how you will communicate to the reader about what you teach, why you teach in that manner, and the values of the actions to student learning. Information must come from a variety of sources: oneself, other professionals, and students. A description of how students apply learning and how the learning is assessed must be included. A table of contents or index must be placed near the beginning of the portfolio for usability. Page numbers must be placed on each entry, and page number identification must appear on the index or table of contents.

Suggested Items for Inclusion

1. Teaching philosophy or teaching beliefs
2. What you teach and why
3. How you teach and with what (the methods, strategies and materials)
4. Your effective teaching characteristics, behaviors, and plans
5. Student learning documentation from your teaching, including student application and evaluation of learning
6. Student and colleague acknowledgment of your teaching
7. Your professional development plan of action, including teaching goals
8. Methods used to improve teaching

Because portfolios should be updated regularly, it is strongly suggested that the author use a word processor. Word processing saves time and promotes a more favorable avenue for changes. Review the completed portfolio, checking for balance between artifacts from yourself, others, and products of good teaching that lead to learning. Before submitting the portfolio for review, permit another educator to review the content, keeping the following questions in mind:

Review Questions

1. Are the author's teaching philosophy and future goals included?
2. What is the teaching area and why?
3. What evidence is included to illustrate effective teaching?
4. What do the colleagues', students', and the author's evidence indicate about teaching success?
5. What strategies does the author employ? What materials and methods are illustrated?
6. Is it clear that students apply learning in the author's class?
7. In what ways do students apply learning in the author's class?
8. What evidence indicates that the author is a developing professional and problem solver?

After completing the review, if your colleague answers these questions satisfactorily, you can assume your documentation accurately portrays positive teaching. If the reviewer fails to respond to any question, you should improve the communication of data involved in the problematic area.

The following model presents content for inclusion in the portfolio.

An Annual Professional Portfolio Model

Content	*Entry Items*
Professional material	1. Evidence of professionalism • Learned society • Colleague • Parent/guardian

	2. Planning evidence • Lessons • Units • Syllabi 3. Student learning evidence • Authentic • Formal 4. Management evidence • Management strategy
Material from others	1. Peer evaluations 2. Administrator evaluations 3. Student evaluation data 4. Teaching recognitions 5. Evidence of advanced training in teaching
Effective teaching examples	1. Student creative work 2. Evidence of impact on students 3. Alumni comments 4. Teacher-graded materials

Guard against considering the professional educator portfolio as an instrument for performance appraisal only. It can represent teaching effectiveness and growth as well as professional activities, and it connects evidence from a range of professionals regarding growth as a teacher.

The Career Portfolio

The professional career portfolio is presented as a process for developing career objectives, assisting with career decisions, and adding a developmental perspective to the work of teaching. The portfolio showcases interests, satisfactions, and needs to assist in revitalizing a career that may have lost some appeal. Career portfolios serve as an ave.ıue to reflect on the meaning of teaching and one's professional growth. Loss of enthusiasm leads one to plod

through the motions of teaching without real zest for the learning environment. School environments provide a rich and changing scene in which to work with an ever-shifting array of personalities in the 5- to 18-year age group. Teachers are helpers who like to work with people—to inform, enlighten, help, train, develop, or cure them (Holland, 1973). As a professional in this career field, it is vital to continually examine the kinds of people with whom you prefer to spend time, the kinds of activities you enjoy doing, and how your personal interests are being met.

Portfolios will provide a broad and in-depth picture of a person's growth and development and have the potential for providing career direction that is stronger and more effective than traditional career counseling. The portfolio assists the teacher and administrator in molding reflective thoughts regarding values, family issues, career needs, and career planning. It provides an opportunity to analyze needs in a broader context, the context of life as it relates to career goals for the future. Few adults have the luxury to pause and place in perspective the impact of career on self-concept and life roles. A portfolio provides a professional collection that helps individuals face the need to reflect on career plans for the future.

A portfolio also provides documented information about the following career issues:

- Analysis of teaching goals
- Analysis of administration goals
- Evidence of professional effectiveness in teaching and administration
- Records of changes resulting from self-evaluation
- Evidence of participation in professional development seminars
- Professional evaluations by others
- Plans for the future

The portfolios permit teachers and administrators to blend past learning experiences with current goals and career aspirations. Also, leadership skills in organization, analysis, professional judgment, and educational values are documented. In sum, both teacher and administrator will benefit from a systematic review of their professional work and future plans.

The following model is recommended for use by professional educators.

A Longitudinal Professional Portfolio

	Content Area	*Suggested Content*
I.	Introduction	What this portfolio is about
II.	Self-analysis	Self-evaluative data Psychological profile Self-reports
III.	Teaching	Teaching responsibilities Teaching philosophy Teaching goals for next 5 years Teaching syllabi Self-evaluation steps
IV.	Career plans	Résumé Career experiences the past 10 years Professional goals for next 5 years Educational training plans

In constructing your portfolio, a 2-inch, three-ring binder or an executive-style leather binder with plastic sleeves is recommended. Placing your name in bold letters on the cover or spine of the portfolio makes identification quick and easy. The portfolio must be neatly assembled and well organized.

Teaching accomplishments must be documented in the portfolio. Three sources of evidence should be required: teaching evidence, personal evidence, and collegial evidence.

Examples of Teaching Evidence

- Student learning examples (class projects, work samples, etc.)
- Individual student projects
- Formal evaluation results that support teaching
- Higher-level thinking skill results (problem-solving activities)

Examples of Personal Evidence

- Planning: lessons and units
- Specific student pedagogy
- Classroom organization and management policies
- Professional growth information
- Cultural diversity instruction
- Technology updating

Examples of Collegial and Student Evidence

- Formal and informal documentation of effective teaching from other educators
- Student assessment results
- Awards and honors
- Videotaping with peer analysis

By providing evidence from these categories, clarity and accuracy result. This, in turn, not only enables school administrators to make better personnel decisions but also helps professionals to better assess their longitudinal career development.

In summary, the professional educator's portfolio should include a statement of desires, accomplishments, and plans for the future, as well as a description of major strengths and plans for remediating areas of weakness. A professional portfolio provides a sense of accomplishment and achievement in the field of education. A portfolio provides the structure for self-reflection about which areas of teaching performance need improvement (Pascal & Wilburn, 1978).

Professional Portfolio Considerations

- When teaching portfolios are used, the reward system becomes more responsive to teaching.
- Portfolios can be infused into current evaluation practices with limited disruption.
- Teaching portfolios are both process and product oriented. By constructing the portfolio, the instructor makes instructional decisions that enhance teaching performance.

- For best results, portfolios should be individualized and comprehensive.
- Selectivity must be used. Portfolios are not a total compilation of documents and materials.
- Manageability, cost, and time efficiency must be addressed in designing portfolios.
- Guidelines must be given to educators if they are to construct portfolios for personnel decisions.
- Assertions identified in the portfolio must have empirical evidence for support.
- For portfolios to have the maximum impact for the constructors, they should be shared with others and responses obtained from the individuals reading them. Feedback helps in clarifying improvement strategies.

Call for Teacher Performance Accountability

During the 1990s, state by state, leaders called for teacher accountability for performance-driven content delineation standards in mathematics, English, civics, foreign languages, and so forth. These standards focused on the student's ability to analyze, understand, and solve problems, and to communicate solutions to inquiry-based learning. Performance indicators surfaced as guidelines to address teacher success. The following are three major performance assessment frameworks:

1. Professional Assessments for Beginning Teachers (PRAXIS III)
2. Interstate New Teacher Assessment and Support Consortium (INTASC)
3. The National Board for Professional Teaching Standards

These frameworks easily could be adapted to serve as a portfolio template. A discussion of each framework follows.

1. PRAXIS III: Classroom Performance Assessment of The PRAXIS Series

Professional Assessment for Beginning Teachers comprise a framework for assessing the skills of novice teachers in their own classrooms. Educational Testing Service developed PRAXIS III for teacher licensing decisions made by states or local agencies empowered to license teachers. The guidelines governing its use explain that PRAXIS III may not be used for employment decisions about licensed educators. PRAXIS III is an open, public system, inclusive of a framework of knowledge and skills for new teachers. The assessment criteria, scoring rules, and the assessment process should be available for those involved in the process (especially the beginning teacher). Three assessment methods are involved—direct observation of classroom teaching, teacher-prepared written documentation, and semi-structured interviews. The framework rests on 4 domains and 19 criteria (Educational Testing Service [ETS], 1995). For further information, contact

ETS
The Framework for Teaching
Mail Stop 14-D
Rosedale Road
Princeton, NJ 08541

2. INTASC, Interstate New Teacher Assessment and Support Consortium

This program of the chief state school officers is crafting model standards for licensing new teachers. Teacher representatives and personnel from 17 state education agencies drafted standards representing a common core of teaching knowledge and skills. INTASC developers hope that these standards are compatible with the National Board for Professional Teaching Standards. The framework rests on 10 principles. For further information, contact

INTASC
One Massachusetts Ave., Suite 700
Washington, DC 20001-1431
202-336-7048

3. National Board for Professional Teaching Standards

Many states prefer that their teachers obtain National Board Certification. To do so, candidates are required to build a professional portfolio presenting their actual classroom practice over a specific time period. Detailed directions for portfolio entries, together with a summary of the requirements and some concrete assistance for planning, are available from the National Board for Professional Standards (1996). For further information, contact

National Board for Professional Standards
26555 Evergreen Road, Suite 400
Southfield, MI 48076
1-800-22-TEACH

or

1730 Rhode Island Avenue, NW, Suite 909
Washington, DC 20036
202-463-3980

Portfolios for Administrators

Whereas the above content has focused on the professional teacher's portfolio, public school administrators should likewise consider initiating portfolios of their professional growth that would document learning acquired through theoretical and practical experiences. A portfolio serves as an exercise in self-evaluation, introspection, analysis, and synthesis. Administrators should relate past learning experiences through their educational and administrative goals to exhibit critical self-analysis and to demonstrate the ability to organize documentation in a clear, concise manner. The experience of developing a portfolio allows administrators to extend their self-esteem as an administrator and enhance their ability to clarify and reach life and work goals. In addition, the portfolio serves as an excellent record of effectiveness in work situations, suitable for presentation to board of education members for review and to others interested in the administrator's skills on the job. We recommend *The Principal Portfolio* by Brown and Irby (1997) as a guide for extended development of the portfolio.

As a vehicle for developing administrative reflectivity, the portfolio provides a means of analyzing, synthesizing, and integrating a variety of knowledge, as well as a means of both training and gaining practical experience. Documentation of the following should be included in the portfolio.

Administrative Documentation

1. Professional career goals
2. Professional growth plan
3. Professional evidence of competence in administration

We suggest that the following content areas be considered by the administrator for inclusion in his or her portfolio. A number of sources have documented anywhere from 10 to 12 skill areas in which a practicing school administrator must demonstrate competence and skill. These include curriculum development, staff supervision, staff development, public relations, school finance, school law, computer management, staff personnel assessment, school business management, and perceptiveness in dealing with the staff and school board.

A professional portfolio permits documentation of skill and competence in the above areas through formal courses, seminars, workshops, self-study, and practical on-the-job experience. Suggested evidence of administrator competence includes national examinations completed and passed, formal coursework completed, independent study and research, professional conferences, and workshops attended and certificates held. In addition, a variety of other professional experiences—acquired from teaching and administration via sample reports, plans, and data analysis—can be included in the portfolio. We also suggest that the portfolio include a résumé and statement of educational philosophy. Administrators should demonstrate the ability to reflect on the critical issues facing learning in the schools and the problems in organizing and managing schools. Administrators must remember that the portfolio is not a scrapbook but is a carefully constructed set of evidence that demonstrates administrator competence in a number of key areas,

including the ability to reflect and solve critical educational problems. When constructing the portfolios, administrators must pause and reflect on the meaning of their work and how they are dealing with the multitude of issues that affect student learning, including management of schools, budgeting for schools, and demonstrating accountability to the public.

Summary

In this chapter, the theory of portfolio use was reviewed and a process for professional educators outlined. A career portfolio is essential for documenting professional growth and assisting teachers in maintaining a zest for teaching as a career. We believe the potential for continual self-growth will be enhanced through the development of a professional portfolio.

Concluding Reflection

Both the process and products of evaluation need to change if education is going to keep up with the dynamic world we live in today. Interdisciplinary and learning-outcome-oriented curriculums require more collaborative work, team teaching, and authentic assessment methods. Using technology in the classroom via the portfolio can create a systematic and organized collection of evidence, which both the student and teacher can use to monitor and develop knowledge, skills, and attitudes. There is a clear need for providing authentic and meaningful documentation of individuals' abilities. Portfolio implementation, when developed correctly, gives everyone involved more responsibility for managing and adapting the learning process. Releasing the power of technology in the classroom via portfolios enables an effective and efficient, as well as a more realistic, process of learning by tying together curriculum, instruction, and assessment.

Resources

Resource A

ISSUES IN PORTFOLIO DEVELOPMENT

Portfolio Content: Traditional assessment and instruction

Teacher Concerns/Implementation

- How can portfolios meld with report cards?
  - Supplement report cards with narratives.
- How can you accommodate for skills expectations?
  - Develop observational strategies for recording skills growth.

Portfolio Content: Organization

Teacher Concerns/Implementation

- How can you avoid "hit or miss" portfolios?
  - Proceed slowly with any changes.
  - Start with structure and use forms for observations.

- How can portfolios provide the most information about each learner?
  - Limit the number of samples selected.

Portfolio Content: Selection

Teacher Concerns/Implementation

- What materials should be selected for the portfolio?
  - Select samples that illustrate areas of strength and weakness.
- Who selects the materials?
  - Allow participation of student and parents in material selection.

Portfolio Content: Retention of materials

Teacher Concerns/Implementation

- How do you find a balance between what is sent home and what is kept?
  - Develop weekly folders to be sent home to parents.
- Do you pass the portfolio on to the next teacher?
  - Make copies of key pieces of the portfolio.
  - Retain selected samples from the beginning and end of the year for the next teacher.

Portfolio Content: Teacher's role

Teacher Concerns/Implementation

- How is a teacher's role in assessment different from the traditional classroom role?
  - Teachers become more aware of children and more active members of the classroom.

Portfolio Content: Student role

Teacher Concerns/Implementation

- What role do students have in the portfolio?
  - In selecting materials, students become more aware of their learning process.

Portfolio Content: Other school personnel

Teacher Concerns/Implementation

- How can portfolios be used in settings other than primary classrooms?
  - Develop content and select populations. Use notebooks or logs.
  - Use peer collaboration teams to evaluate and document progress.
- How do you maintain consistency and continuity with transient students?
  - Continue traditional report card use with supplemental portfolio documentation.
  - Maintain regular communication with caretakers to share evidence of progress.

Resource B

PORTFOLIO CONFERENCE REPORT

Subject/Class _____ Date _____

Teacher _____ Student _____

Portfolio	*Content Analysis*		
	Amount	Quality	Recommendations
Subject area:			
Subject area:			
Subject area:			

XC: File

Resource C

PORTFOLIO CONFERENCE SUMMARY

Subject/Class _____ Date _____

Teacher _____ Student _____

Conference Summary With Recommendations:

XC: Student folder

XC: Parents or guardian

Resource D

PRAXIS ELECTRONIC PORTFOLIO TEMPLATE

Table of Contents
Title Page
Introduction
Credentials
- Résumé
- Philosophy
  - Diplomas
    - University of Cincinnati
    - Western New England College
- Transcripts
    - University of Cincinnati
    - Western New England College
- Self as Teacher

Domain A: Organizing Content Knowledge for Student Learning
Domain B: Creating an Environment for Student Learning
Domain C: Teaching for Student Learning
Domain D: Teacher Professionalism
Summary

Resource E

ANNOTATED BIBLIOGRAPHY

Adams, D. M., & Hamm, M. E. (1992). Portfolio assessment and social studies: Collecting, selecting, and reflecting on what is significant. *Social Education, 56*(2), 103-105.

This article raises a number of important questions for teachers to consider as they develop a portfolio process (e.g., What type of physical container would hold representative pieces? How are portfolios evaluated? etc.).

Batzle, J. (1992). *Portfolio assessment and evaluation: Developing and using portfolios in the K-6 classroom.* Cypress, CA: Creative Teaching.

This workbook provides examples of how to organize, develop, and assess student portfolios; presents very good forms and checklists.

Belanoff, P., & Dickerson, M. (Eds.). (1991). *Portfolios: Process and product.* Portsmouth, NH: Boynton/Cook.

A total of 23 articles comprise this excellent resource for evaluating student writing and establishing community standards for portfolio grading.

Bernhardt, V. L. (1994). *The school portfolio.* Princeton, NJ: Eye Junction, Focus on Education.

This book provides a framework for school improvement, criteria for assessment, and rules for quality planning. A leadership process is discussed with a focus on active community and parent partnerships.

Bozzone, M. A. (1994, May/June). Professional portfolio: Why you should start one now. *Instructor,* pp. 47-50.

This article captures the essence of developing a professional portfolio. Four teachers share the contents of their portfolios and the reasons portfolios are important to them as professionals.

Camp, R. (1990). Thinking about portfolios. *The Quarterly of the National Writing Project and the Center for the Study of Writing, 12*(3), 8-14.

The article provides a detailed description of the Arts PROPEL project and the PROPEL approach to portfolios. Its primary purpose is to create assessment closely integrated with institutions in the arts, such as visual arts, music, and imaginative writing.

Fan, R., & Tone, B. (1994). *Portfolios and performances assessment.* New York: Harcourt Brace.

Fan and Tone provide a strong review of authentic assessment through performance-based learning.

Glanger, S. M., & Brown, C. S. (1993). *Portfolios and beyond: Collaborative assessment in reading and writing.* Norwood, MA: Christopher-Gordon.

Chapters 1, 3, and 5 outline the framework for comprehensive assessment of the language arts program.

Harp, B. (Ed.). (1993). *Assessment and evaluation in whole language programs.* Norwood, MA: Christopher-Gordon.

Harp has edited an excellent review of assessment issues in whole language programs. Chapters 5 and 7 are particularly good on portfolio use.

Herman, J. L., Aschbacker, P. R., & Winters, L. (1992). *A practical guide to alternative assessment.* Alexandria, VA: Association for Supervision and Curriculum Development.

This monograph offers cogent guidance on the creation and use of alternative measures of student achievement. It suggests that portfolios provide multiple measures over time and "showcase" student work in progess and work completed.

Jasmine, J. (1992). *Portfolio assessment for your whole language classroom.* Huntington Beach, CA: Teacher Created Materials.

This monograph is designed to help the classroom teacher with portfolio assessment issues in the classroom (Grades 1-6). It provides step-by-step procedures for starting portfolios.

National Education Association. (1993). *Student portfolios.* Washington, DC: Author.

An excellent resource on school restructuring efforts, this small monograph focuses on portfolio assessment with an emphasis on longitudinal data gathering by students. Elementary and high schools are discussed, including a video portfolio model.

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